REPORT RESUMES

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THE ECONOMIC EFFECTIVENESS OF RETRAINING THE UNEMPLOYED, A STUDY OF THE BENEFITS AND COSTS OF RETRAINING THE UNEMPLOYED BASED ON THE EXPERIENCE OF WORKERS IN CONNECTICUT.

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A STUDY WAS MADE OF RETRAINING PROGRAMS IN FOUR LABOR MARKETS IN CONNECTICUT, UNDER BOTH THE AREA REDEVELOPMENT ACT AND STATE SPONSORSHIP. THE PURPOSE WAS TO DETERMINE THE BENEFITS AND COSTS TO WORKERS, THE GOVERNMENT, AND THE ECONOMY. THE STATE HAD PIONEERED SUCH PROGRAMS SO A SAMPLE COULD BE STUDIED OF THOSE WHO HAD LONG WORK-HISTORIES AFTER RETRAINING. THE TRAINEES WERE DIVIDED INTO SIX GROUPS--THOSE WHO COMPLETED THE COURSE WITH AND WITHOUT EMPLOYMENT, THOSE WHO WITHDREW WITH AND WITHOUT EMPLOYMENT, AND THOSE WHO REFUSED RETRAINING WITH AND WITHOUT EMPLOYMENT. THREE CONTROL GROUPS WERE TRAINEES WHO, WITHOUT EMPLOYMENT, COMPLETED THE COURSE, WITHDREW, OR REFUSED IT. THE BENEFIT-COST RATIO FOR THE INDIVIDUALS (SUCH AS REDUCED ANNUAL UNEMPLOYMENT AND INCREASED ANNUAL WAGE VERSUS INCOME LOST DURING TRAINING AND HIGHER INCOME TAX AFTERWARDS) WAS NOT AS HIGH AS THE BENEFIT TO THE GOVERNMENT (SUCH AS REDUCED COSTS OF UNEMPLOYMENT AND PUBLIC ASSISTANCE) AND TO THE ECONOMY (THE INCREASE IN GROSS NATIONAL PRODUCT AND REDUCED AGGREGATE UNEMPLOYMENT LEVEL). IT WAS FELT THAT THE BENEFICIAL EFFECTS OF THE RETRAINING PROGRAMS MIGHT BE LOWERED BY THE ADDITION OF THE MANPOWER DEVELOPMENT AND TRAINING ACT PROVISION FOR TRAINING THE HARD CORE UNEMPLOYED. (EB)

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LESSON II
A
B

The Economic Effectiveness of Retraining the Unemployed

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THE ECONOMIC EFFECTIVENESS
OF RETRAINING THE UNEMPLOYED

A Study of the Benefits and Costs of Retraining the Unemployed Based on the Experience of Workers in Connecticut.

by

Michael E. Borus

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M.E.B.

April, 1964

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CHAPTER I

AN INTRODUCTION TO THE PROBLEM AND THE STUDY

The Problem

Almost everyone who is concerned with economic problems -- members of the Executive Branch, the Congress, and economists -- views the persistence of unemployment rates in excess of five per cent of the civilian labor force over a period of six years as a major economic issue. Such high unemployment seems paradoxical since it has coincided with the existence of attractive job openings, as an inspection of the classified advertisements in any newspaper will show. It appears that the skill requirements for the occupations with job openings serve as effective barriers to labor force mobility and that the failure of the unemployed and underemployed to move into these vacancies is attributable to their lack of required skills.

Legislation

To remedy this situation, several states incorporated programs for retraining the unemployed into the framework of their unemployment insurance programs. However, until the Area Redevelopment Act (A. R. A.)[1] was enacted on May 1, 1961, there was no federal program with retraining provisions specifically designed to provide the unemployed with skills required in the labor market. This Act provided funds for retraining up to 25,000 unemployed and underemployed workers in areas of "substantial and persistent unemployment."[1] Retraining allowances equal to the average unemployment insurance benefit in each state were authorized for periods lasting up to sixteen weeks. Basically, the Area Redevelopment Act retraining provisions served as the pilot project for federal retraining.

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[1] Public Law 87 - 27.

A much more comprehensive federal retraining program followed the A. R. A. in 1962. _The Manpower Development and Training Act of 1962_[2] (M.D.T.A.) originally envisioned retraining 400,000 unemployed and underemployed workers over a three-year period. No limitations were imposed on the areas in which retraining could take place, as was the case under the A. R. A. Workers could be retrained in areas with relatively low levels of unemployment as well as in the depressed areas. In addition, the maximum duration for the payment of retraining allowances was increased to a full year. Provisions were also included which allowed the financing of on-the-job retraining as well as institutional retraining.

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1. "Areas of substantial and persistent unemployment" are defined by the Bureau of Employment Security, U.S. Department of Labor, as areas in which "1. Unemployment is now 6 percent or more of the work force, discounting seasonal or temporary factors. 2. The annual average unemployment rate in the area has been: (a) At least 50 percent above the national average for 3 of the preceding 4 calendar years; or (c) At least 100 percent above the national average for 1 of the preceding two calendar years." U.S. , Bureau of Employment Security, _Area Labor Market Trends August 1963_, p. 46.

2. Public Law 87 - 415.

The M.D.T.A. was expanded further by amendments enacted on December 19, 1963.[1] If the worker needed training "for attainment of basic educational skills" in order to enter vocational retraining, the amendments provided for up to 20 weeks of additional retraining allowances. Also, the allowances the worker could receive were raised, as was the amount of part-time employment he could undertake without reducing his allowance. Finally, the amendments increased from 5 percent to 25 percent the proportion of the total allowances which could be paid to workers under 22 years of age.

The Purpose of the Study

The purpose of this study is to weigh the benefits and costs of the retraining programs to determine if retraining is a sound investment for the individual worker, the government, and the economy. The analysis must be limited to the economic variables, which alone are quantifiable; the psychological and sociological variables involved in retraining will not be dealt with here.[2] Thus, the objectives of this study are:

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[1] Public Law 88-214.

[2] It may be argued that by limiting itself to economic criteria, the study gives a false sense of accuracy while it ignores many important factors. Such criticism may be valid. However, since the non-economic variables can not be measured objectively, as can the economic variables, each individual can attach a different set of values to them. Therefore, this study seeks to determine accurately

1. The determination of the economic benefits derived from retraining by the individual worker, the government, and the economy.
2. The determination of the economic costs of retraining to the individual worker, to the government, and to the economy, and an evaluation of the efficiency of the M.D.T.A. program and of possible alternative programs.
3. The comparison of these economic benefits and costs to determine the value of retraining as an investment opportunity for the individual worker, for the government and for the economy.
4. The evaluation of alternatives to the present organization and sponsorship of the retraining program.

The Method of the Study

The Sample. The foundation of this study is a comparison of the experience of workers upon the completion of retraining with their expected experience had they not participated in retraining. A sample of 373 workers, 312 men and 61 women,[1] were contacted.[2] All of these workers were actually involved in retraining programs in Connecticut.

The sample was selected from workers involved in Connecticut's retraining programs because, in addition to the fortunate circumstance

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the economic value of retraining and the weighting of the variables is left to the reader, who can then determine if retraining is a sound program by using his own weights plus the economic values found here.

[1] Only the employment data on the men in the sample were used for most of the calculations of this study because of an unusual distribution of the women in the sample by training status. For a discussion of this see Appendix D.

[2] The sample composition and the criteria used in selecting the sample are discussed in Appendix B.

of the author's residence, this state has pioneered in the area of retraining. Connecticut was one of the first states in the country to offer publicly supported classes specifically designed to retrain unemployed workers. Prior to any federal program the State Departments of Labor and Education, at the direction of the Governor, provided funds and sponsorship to initiate courses under the state's unemployment insurance program. The experience gained from the state-sponsored courses allowed the Connecticut towns of Ansonia, Bristol, and Danielson to be among the first in the country to qualify for retraining funds under the Area Redevelopment Act. Upon the passage of the M.D.T.A., Connecticut requested federal assistance for its state-supported courses and proposed additional courses for the retraining program. Connecticut, however, did not wait for the federal funds to be appropriated before instituting its new courses, as did most other states, In July 1962, the expanded program was put into effect under state auspices. As a result of this early start, Connecticut had placed more graduates of M.D.T.A. courses than had any other state.[1]

These pioneering efforts by Connecticut in the field of retraining permitted the selection of a sample of workers whose post-retraining employment records cover a sufficiently long period to allow meaningful and significant comparisons of the effects of retraining. To estimate the effects of retraining, the sample was selected to include retrainees and non-retrainees who are comparable in all respects except for the retraining. This allowed comparisons of the employment records of the retrainees with those of the workers who did not complete the retraining course, so that any differences in income, unemployment, or unemployment benefits could be assumed to reflect the effects of the retraining.

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[1] U.S. Bureau of Employment Security, "Employment Service Spurs Job Placements of M.D.T.A. Trainees," The Labor Market and Employment Security, August 1963 (Washington, D.C.: U. S. Government Printing Office, 1963), page 51.

System of Classification. Almost all of the previous studies of retraining[1] divided the workers into three groups: 1)the workers who successfully completed the retraining course, 2) workers who entered the retraining course but withdrew before the course was completed, and 3) workers who qualified to enter the retraining course by passing the aptitude tests and meeting all other entrance requirements, but who chose not to enter. The three groups of workers were then compared, the latter two serving as the control groups. This trivariate classification system has two distinct advantages. First, the categories are clear-cut. Second, use of the categories does not require any information that cannot be taken from class registers or State Employment Service records for the retraining courses, so the workers themselves need not be contacted. But the advantages of the threefold classification system are offset by the limitations of the implicit assumption that each category is homogeneous in composition. In actuality, such homogeneity does not exist. There are two distinct groups of workers in each of the three categories, with the result that aggregation leads to the loss of relevant information.

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[1] See for examples: "Part 1, The New England Experience Retraining the Unemployed," New England Business Review, August 1962, Federal Reserve Bank of Boston, pp. 1-4; and U. S., Office of Manpower, Automation and Training: Training for Jobs in Redevelopment Areas.

More specifically, among the workers who do not enter a retraining course after meeting the requirements for the course, some refuse retraining because they have found employment in occupations which do not require them to be retrained. Similarly, some of the workers who withdraw from retraining before completing the course have found employment in other occupations than those taught. By definition, these workers reject retraining in favor of another type of employment which offers them a greater expected net economic advantage. To be sure, some of them may miscalulate the relative opportunities of retraining and of the other type of employment.[1] However, their average employment experience can be expected to be better than that of the workers who have not been offered positions with greater potential net economic advantages. This latter group of workers includes both the workers who complete retraining, and the workers who do not have an offer of employment when they withdraw from or refuse retraining. Thus, only those workers who withdraw from or refuse retraining for reasons other than employment are fully comparable with the retrainees.

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[1] A degree of uncertainty was involved in retraining especially for the workers in Bridgeport and Ansonia where there was no guarantee of placement even on the successful completion of the retraining course. (See Appendix A) Also some of the workers may have been forced by the financial constraints of low retraining allowances and lack of capital to take jobs which offered them a greater income at the time, although in the long run retraining would have yielded greater advantages. However, such cases in the sample are relatively few.

Even the retrainees are not a homogeneous group. Some who complete retraining are not placed in positions that require the skills learned during retraining. Thus retraining aids them only indirectly in finding employment, and their experience is not substantially changed by retraining. Therefore, the experience of this particular group should not be used to illustrate the benefits of retraining. Rather, they can serve as a control group, whose members are compared with the retrainees who make use of the skills acquired during retraining.

In view of the lack of homogeneity in the standard trivariate classification system, the following six categories will be used:

1. Workers Who Utilized Retraining: Those workers who, as a consequence of having taken the retraining course, were placed in jobs which utilized skills learned in the retraining course.

2. Workers Who Completed but did not Utilize Retraining: Those workers who completed retraining, but were placed in jobs utilizing skills other than those taught in the retraining course, or were placed in jobs utilizing skills taught in the retraining course, but were not placed as a consequence of having learned new skills.

3. Workers Who Withdrew from Retraining for Employment: Those workers who entered but did not complete the retraining course because they found employment for which retraining was unnecessary.

4. Workers Who Withdrew from Retraining Without Employment: Those workers who entered but did not complete the retraining course for reasons other than an offer of employment.

5. Workers Who Refused Retraining For Employment: Those workers who qualified for, but did not enter the retraining course because they found employment for which retraining was not necessary.

6. Workers Who Refused Retraining Without Employment: Those workers who did not enter the retraining course for reasons other than an offer of employment.

Control Groups. The control groups chosen for this study are the workers who completed retraining but did not utilize the skills taught in the course, the workers who withdrew from retraining without employment, and the workers who refused retraining without employment. Differences in demographic characteristics,[1] motivation, and ability prevent any of these groups from being fully comparable with the group of workers who utilized the retraining. The effects of the differences in demographic characteristics on the employment records of the four groups are treated in intergroup comparisons by the use of multiple regression techniques.[2] The differences in motivation and ability are nonquantifiable and therefore have to be handled in a less precise manner.

It may be assumed that the workers who did not enter or did not complete retraining without an offer of employment were not as able or as highly motivated as were the workers who completed retraining. Given this assumed inferior ability and motivation, the expected employment and earnings of these workers would have been less than the expected employment and earnings of the workers who utilized retraining even if the latter group had not participated in the retraining program. Therefore, comparisons of the employment records of the workers who utilized retraining with the records of the workers who withdrew from or refused retraining without an offer of employment are assumed to overstate the effects of retraining.

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[1] These characteristics include age, education, labor force attachment and participation, and previous training, income, unemployment, and unemployment benefits. See Appendix D.

[2] For a discussion of the multiple regression models, see Appendix E.

In contrast, comparisons of the records of the workers who utilized retraining and the records of the workers who completed but did not utilize the course materials are assumed to understate the effects of retraining for two reasons. First, some workers who finished retraining did not utilize it because they found or were called back to more attractive jobs than those offered by the retraining occupations. These were presumably the most able and highly motivated of the retrainees, and they should be expected to have better records than retrainees who were not offered such positions. Second, the workers who completed but did not utilize retraining were aided indirectly by completing the course, because the State Employment Service gave special attention to placing retrained workers. Furthermore, the occupational mobility and motivation demonstrated by the workers in participating in retraining encouraged employers to hire retrainees for non-retraining-related occupations. Thus, the income and employment of workers completing the course but not utilizing their recently acquired skills are assumed to have been raised above what they would have been without the retraining.

In the absence of retraining, therefore, the expected employment records of the retrainees who utilized skills learned in the course would lie somewhere in the range between the actual employment records of the less able and motivated workers who refused or withdrew from retraining without employment, and the employment records of the more able or motivated workers who completed but did not utilize the retraining. The expected earnings and employment of the retraining-utilizing workers would fall within this range but exactly where cannot be ascertained. However, to form a conservative estimate of the benefits of retraining, the expected values for the workers who utilized retraining were set close to the observed values of the workers who completed but did not utilize the retraining.

An Outline of the Study

The next chapter will be devoted to determining the benefits of retraining to the individual worker. This will require two sets of calculations based on the data gathered from the sample: the benefits derived by the workers who utilize the retraining skills, and the probability that a worker will utilize the retraining. The research questions in the second chapter will be:

1. Do the employment records of the retrained workers who utilized retraining show significant gross improvements when compared with the employment records of the control groups?
2. Are there factors which reduce the gross improvement in income?
3. What is the expected duration of these benefits?

4. To what extent would the worker have enjoyed these benefits had he not been retrained?

5. What time horizon does the worker use to calculate the benefits?

6. What is the probability that a given worker will use the training?

7. What are the expected benefits of retraining for an average worker, based on the experience of the workers in the sample?

Chapter Three will investigate the benefits of retraining accruing to the government and the total economy. Whereas the retraining may aid the individual workers who participate in the program, there will be no aggregate gain if other workers are displaced by the retrained workers. Therefore, this chapter will concern itself with the net effects of retraining. The inquiry involves also a discussion of the relationship between the aggregate benefits of retraining and the state of the economy. The research questions of Chapter Three will be:

1. Have the retrained workers displaced other workers or have they induced other reductions in production or employment which might offset the benefits found in the preceding chapter?

2. What effects does the existence of less than full employment have on the aggregate benefits?

3. What is the expected duration of the aggregate benefits?

4. What are the expected benefits to the government per worker who enters retraining, based on the experience of the workers in the sample?

5. What are the expected benefits to the total economy per worker who enters retraining, based on the experience of the workers in the sample?

6. What are the expected effects of the 1963 M.D.T.A. amendments?

7. Is there an alternative to these amendments?

The fourth chapter will discuss the costs of retraining to the individual worker, the government, and the economy. The costs to the individual under the federally-sponsored retraining program are only the opportunity cost of income lost during retraining and the cost of transportation; hence that analysis will be quite brief. The treatment of the actual retraining costs borne by the government will be much more complex and will include the costs of the present and amended M.D.T.A. programs as well as an alternative program developed in the third chapter. The research questions will be:

1. What are the approximate costs of retraining to the workers based on the experience of the sampled workers?

2. What are the average government costs per worker who enters retraining, based on the experience of the workers in the sample?

3. What will be the effect of the M.D.T.A. amendments on these costs?

4. What are the average costs per worker who enters retraining to the total economy, based on the experience of the workers in the sample?

5. What would be the effect of the alternative proposal on the aggregate costs?

The fifth chapter will compare the benefits and costs of retraining to each of the parties involved. Benefit-cost ratios will be determined for the individual worker, the government, and the total economy. The research questions will be:

1. Do the benefits, when weighed against the costs, justify the retraining program as an investment for the individual?
2. Do the benefits, when weighed against the costs, justify the retraining program as an investment for the government?
3. Do the benefits, when weighed against the costs, justify the retraining program as an investment for the total economy?
4. How would the benefit-cost ratios change if the alternative proposal were adopted?

The sixth chapter will discuss the possibility of alternative sponsors for the retraining program: Sponsorship by the private sector or by the individual. The economic justification for a government program will be presented here. The research questions will be:

1. Should the retraining program be removed from the auspices of the government and delegated to the individual or to the private sector?
2. What effect would such an action have on the number and composition of the workers who are retrained?

The final chapter will summarize the findings of the preceding chapters and make recommendations arising out of these findings for improvements in the retraining program.

CHAPTER II

THE BENEFITS OF RETRAINING FOR THE INDIVIDUAL WORKER

The Gross Benefits of Retraining for the Worker Who Utilizes Retraining

The benefits of retraining for the individual consist of any increase in his disposable income and any decrease in his unemployment which may result from retraining. The existence of such benefits for the workers in the samples was found by using multiple regression techniques to compare the employment records of the workers who utilized retraining with the employment records of the control groups. Adequate information was available on the post-retraining experience of the men in the sample for approximately one year after the completion of the course to which they were assigned or would have been assigned if they had entered a course.[1] The multiple regression techniques permitted account to be taken of any demographic differences between the two groups.[2] The result of using these techniques is the determination of the average gross improvement in wage income and unemployment accruing to the workers who utilized retraining.

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[1] There were too few women in some of the control groups to permit an accurate analysis of any benefits they might have gained from retraining.

[2] For a discussion of the multiple regression models see Appendix E.

Increased Wage Income. There can be no doubt that retraining significantly aided those workers who utilized the skills they had learned in the courses. Their earnings were significantly higher than the earnings of each of the control groups, as is seen in Tables I and II, below.

Two measures were used to ascertain the earned wage income of the sample. The first measure was the average income per week that the worker was in the labor force, as computed by multiplying the gross hourly wage rate by the reported average number of hours worked, for each week the worker was in the labor force from the end of the retraining period to the date of the interview.[1] All data were obtained by interviews with workers. By linear multiple regression techniques that take account of the different demographic characteristics of the retrainees and the control groups,[2] the workers who utilized retraining were found to average $7.44 more for each week in the labor force than did the workers who completed but did not utilize the retraining, $8.83 more per week than the workers who refused retraining with employment, and $15.06 more per week than the workers who withdrew from retraining without employment.[3]

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[1] No allowance was made for days lost occasionally due to illness or days lost due to strikes because these were not a function of the occupation. Time lost due to the nature of the job, such as launchings at the submarine works or seasonal layoffs in construction, was included in the calculations.

[2] The regression models are discussed in Appendix E. These calculations were based on Regression Model One.

[3] The average computed income per week in the labor force of the workers who refused retraining for employment was $4.03 greater than that of the workers who utilized the retraining. The average for the workers who withdrew from retraining for employment was $10.96 greater. Neither of these coefficients was statistically significant.

TABLE I

The Amount by Which the Average Computed Wage Income per Week in the Labor Force of the Workers Utilizing Retraining Exceeded the Average Computed Wage Income per Week in the Labor Force of Each of the Control Groups for the Men in the Sample: Coefficients of Partial Regression, Standard Errors, and Student "t" Values.[a]

CONTROL GROUP	Coefficients of Partial Regression giving the Average Amount by which the Computed Wage Income of Workers Utilizing Retraining Exceeded that of the Control Groups	STANDARD ERROR	STUDENT "t"[b]
Completed but did not utilize retraining	$7.44	5.25	1.418
Withdrew without employment	15.06	6.01	2.504
Refused without employment	8.83	6.19	1.425

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a. These calculations are based on Regression Model One (See Appendix E). The effect of additional independent variables was determined for each control group by subtracting the partial regression coefficients of Regression Model Three from those of Regression Model Four. The impact of the additional variables was to increase the weekly differential by $1.18 for the workers who completed but did not utilize retraining, and $2.85 for the workers who refused retraining without employment. The differential for the workers who withdrew from retraining without employment was decreased by $.23.

b. Assuming that the sample is a random sample, if the Student "t" value exceeds 1.645 this indicates that of 100 samples taken from the sample population at least 95 will have greater mean values for the workers who utilized the retraining than for the given control group.

The second measure of earned income of the workers in the sample was their quarterly earnings as reported by their employers to the Unemployment Insurance Division of the Connecticut Department of Labor. These data covering four quarters during 1962 and 1963[1] indicate that the average total earnings for the year of the workers who utilized retraining skills exceeded by $424.40 the average income of the workers who completed the retraining but did not utilize it.[2] The average yearly earnings of the workers who utilized retraining exceeded that of the other two groups by even greater amounts: $1,032.85 more than the earnings of workers who refused retraining without employment, and $1,175.70 more than the earnings of workers who withdrew from retraining without employment.[3]

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[1] The specific quarters were those between April 1, 1962 and March 31, 1963. Data beyond the first quarter of 1963 were not available when the information was collected, and data for periods before the second quarter of 1962 would have included earnings of some of the workers before they had completed retraining.

[2] Differences in the average computed earnings per week in the labor force and the earnings reported by employers may arise from any of the following considerations: the change in the size of the subsample used for Regression Models One and Two; gaps in the unemployment insurance data for part-time jobs which were reported in the interview but were not covered by the unemployment insurance program; incorrect reporting by the interviewees of their wages, hours, or overtime rates; slightly different time periods for the two sets of data; or the fact that the computed figures are per week in the labor force, the reported figures include time not in the labor force.

[3] The average earnings for the entire four quarters of the workers who utilized retraining was $3.41 greater than the average of the workers who refused retraining without employment and $10.03 greater than the average of the workers who withdrew from retraining without employment.

TABLE II

The Amount by Which the Average Quarterly Earnings, as Reported by the Unemployment Security Division, Connecticut Department of Labor, of the Workers Utilizing Retraining Exceeded the Average Quarterly Earnings of Each of the Control Groups for the Men in the Sample, by Quarters: Coefficients of Partial Regression, Standard Errors, and Student "t" Values.[a]

CONTROL GROUP	QUARTER	Coefficients of Partial Regression Giving the Average Amount by Which the Quarterly Earnings of Workers Utilizing Retraining Exceeded that of the Control Groups	STANDARD ERROR	STUDENT "t"
Completed but did not Utilize Retraining	2nd 1962	$ 61.07	84.77	0.720
	3rd 1962	156.30	90.48	1.727
	4th 1962	77.90	92.98	0.839
	1st 1963	129.13	150.80	0.856
	Total	$ 424.40		
Withdrew Without Employment	2nd 1962	$ 283.63	90.57	3.131
	3rd 1962	352.55	96.66	3.647
	4th 1962	216.02	99.23	2.177
	1st 1963	323.50	161.11	2.008
	Total	$1,175.70		
Refused Without Employment	2nd 1962	314.33	103.51	3.037
	3rd 1962	206.59	110.48	1.870
	4th 1962	205.04	113.41	1.808
	1st 1963	306.89	184.13	1.667
	Total	$1,032.85		

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a. These calculations are based on Regression Model Two. (See Appendix E) The effect of additional independent variables was determined for each control group by subtracting the partial regression coefficients of Regression Model Three from those of Regression Model Four.

The above figures, then, indicate that retraining increased the annual earnings of the workers who utilized the skills by an amount ranging from $400 to $1200 a year. The actual benefit probably is closer to the lower value, since, as mentioned earlier, most of the workers who did not enter or complete the course must not have been as highly motivated or as able as the retrainees. On this basis it will be assumed that the average added income the worker received by retraining and making use of the skills learned approximated $500 per year.

Reduced Unemployment. The greater earnings of the workers who utilized the retraining were attributable more to lower unemployment than to higher wage rates. The average wage rates of the four groups were approximately the same, $2.00 an hour.[1] As table III indicates, the unemployment of the workers who utilized retraining, however, was considerably less than the unemployment of the control groups. Based on data given in the interviews, the workers who utilized retraining were unemployed 4.6 per cent of the time that they were in the labor force in the period from the end of the retraining to the interview, the workers who did not utilize the retraining were unemployed 14.1 per cent of the time, the workers who withdrew without employment were

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The impact of the additional variables was to increase the total differential for the four quarters by $31.87 for the workers who completed but did not utilize retraining, and by $257.89 for the workers who refused retraining without employment. The differential for the workers who withdrew from retraining without employment was decreased by $41.43.

[1] The average hourly wage rates as reported in the interview, for the workers who utilized the retraining, were $1.78 at the time of the first placement after retraining, $1.93 six months after retraining, and $2.01 one year after retraining. The average hourly wage rates for the other groups at these three times were $1.88, $1.97, and $1.97, for the workers who did not utilize retraining; $1.67, $1.81, and $2.13 for the workers who withdrew from retraining without employment; and $1.81, $2.08, and $2.04 for the workers who refused retraining without employment.

TABLE III

The Amount in Percentage Points by Which the Average Rate of Employment While in the Labor Force, from the End of Retraining Until the Date of the Interview, of the Workers Utilizing Retraining Exceeded the Average Rate of Employment of Each of the Control Groups for the Men in the Sample: Coefficients of Partial Regression, Standard Errors, and Student "t" Values[a]

CONTROL GROUP	Coefficients of Partial Regression Giving the Average Number of Percentage points by Which The Rate of Employment of Workers Utilizing Retraining Exceeded that of the Control Groups	STANDARD ERROR	STUDENT "t"
Completed but did not Utilize the Retraining	9.469	3.147	3.009
Withdrew Without Employment	12.484	3.603	3.465
Refused Without Employment	13.305	3.710	3.586

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[a] These calculations are based on Regression Model One. The effect of additional independent variables was determined for each control group by subtracting the partial regression coefficients of Regression Model Three from those of Regression Model Four. The impact of the additional variables was to increase the differential in the employment rates by .280 percentage points for the workers who completed but did not utilize retraining and .934 percentage points for the workers who refused retraining without employment. The differential was decreased by .464 percentage points for the workers who withdrew from retraining without employment.

unemployed 17.1 per cent of the time, and the workers who refused retraining without employment were unemployed 17.9 per cent of the time.[1] Thus retraining increased the employment of the workers who made use of it by approximately 10 per cent.

Factors that Reduce the Gross Benefits of Retraining for the Worker Who Utilized Retraining

The previous section revealed that, on the average, the individual who utilized his retraining increased his wage income by $500 a year and reduced his annual unemployment by approximately five weeks. These are not the benefits of retraining actually received by the worker, however. First, the increased wage income may be offset by increased taxes and decreased unemployment benefits so that the worker's disposable income does not rise by the full $500. Second, some of the workers might have been placed in the same occupations even if they had not been retrained.[2] In these cases the increased income and decreased unemployment cannot be ascribed in any part to the retraining. Third, the benefits of retraining described in the

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1. The unemployment rates were calculated by adding the average differential between the control groups and the workers who utilized retraining to the average unemployment rate for the latter group.

2. The problems involved in determining whether the workers would be retrained by private programs if no government retraining program existed will not be discussed here. This section of the essay will deal with the net effects of any program of retraining regardless of its sponsor. The relative merits of governmental and private retraining programs will be discussed in Chapter VI.

preceding section were those for the first year following the workers' completion of the courses. These same benefits may not continue for the remainder of the individual's working life; in particular, the worker may move to another occupation where he does not make use of the skills learned in the retraining course. Finally, since the benefits of retraining will accrue to the worker over time, these benefits must be discounted by some measure of the worker's time preference to find their present value to him. Also the time horizon of the worker must be determined to find how far into the future he calculates the benefits of retraining. These four factors will now be examined.

Reductions in Disposable Income (Increased Taxes). Part of the additional income which results from retraining must be paid by the worker for personal income taxes. The amount of the tax depends on the worker's total family income and the number of exemptions he claims for dependents. The average wage income earned by the sampled workers who utilized the retraining was $4,358.70 for the year following the completion of the retraining course. For a single worker with no dependents (approximately 53 per cent of the workers in the sample would fall in this category) the tax rate on the increment in income due to retraining would probably be 20 per cent[1] for his taxable income would most likely fall between $2000 and $4000. For a married worker filing a joint return with his wife, the tax rate would probably be between 15 and 17 per cent depending on the number of dependent exemptions claimed and the extent to which the

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[1] The income tax rates used in this study are those which will go into effect in January 1965. Commerce Clearing House Inc., Standard Federal Tax Reporter 1964, Vol. 7, No. 16-121, Par. 6151, pp. 71,002-71-009.

TABLE IV

The Amount by Which the Average Government Unemployment Benefit Received Each Week by Each of the Control Groups Exceeded the Average Government Unemployment Benefit Received Each Week by the Workers Utilizing Retraining: Coefficients of Partial Regression, Standard Errors, and Student "t" Values[a]

CONTROL GROUP	Coefficient of Partial Regression Giving the Average Amount by Which the Government Unemployment Benefits Received by the Control Groups Exceed that of the Workers Utilizing Retraining, per Week	STANDARD ERROR	STUDENT "t"
Completed But Did Not Utilize Retraining	$1.16	0.876	1.328
Withdrew Without Employment	$3.25	1.004	3.247
Refused Without Employment	$2.65	1.033	2.570

a. These calculations are based on Regression Model One. The effect of additional independent variables was determined for each control group by subtracting the partial regression coefficients of Regression Model Three from those of Regression Model Four. The impact of the additional variables was to decrease the weekly differential by $.23 for the workers who completed but did not utilize the retraining and by $.17 for the workers who refused retraining without employment. The differential was increased by $.06 for the workers who withdrew from retraining without employment.

wife worked. Thus, the average tax rate for the workers in the sample on the $500 increment in income would be approximately 18 per cent. However, when the standard 10 per cent reduction is taken the effective tax rate on the added income falls to approximately 16.2 per cent.

In addition to the increased personal income tax that the worker must pay on the added income, he must also make an increased contribution for Old Age Survivors and Dependents Insurance. The present rate is 3.625 per cent on income up to $4800, in 1966 the rate will rise to 4.125 per cent and in 1968 to 4.625 per cent. When the Social Security tax is added to the increased personal income taxes, it is found that the worker's additional income due to retraining is reduced by approximately 20 per cent to $400.

Reductions in Disposable Income (Reduced Government Unemployment Benefits). As would be expected, the 10 per cent reduction in unemployment resulting from retraining led to significant reductions in the unemployment benefits received by workers who utilized the retraining.[1] The average weekly benefits received by workers who completed but did not use the retraining was $1.16 higher than that received by the workers who utilized retraining. Similarly, the workers who refused retraining without employment received $2.65 more per week, and the workers who withdrew from retraining without employment received $3.26 more per week, than did the workers utilizing retraining. Thus, the federal, state, and local governments paid approximately $100 a year less to the workers utilizing retraining than these workers would have received in the absence of the retraining program. As a result, the increment in disposable income of the average worker who utilized retraining is reduced by another $100 per year.

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[1] The unemployment benefits considered included: unemployment compensation, special veterans benefits, food stamps, aid to dependent children, and relief.

The Occupations of the Retrainees in the Absence of Retraining. When interviewed, 7 per cent of the workers who were placed in jobs making use of the skills taught in the retraining courses claimed that they would have been placed in the same or similar jobs even if they had not taken the course. They were probably correct in their claim because 19 per cent of the workers in the sample who withdrew from retraining or refused retraining were subsequently placed in jobs which used skills taught in the retraining courses. Assuming that the retrainees would have had the same experience had they too not completed the course, 19 per cent of them would have achieved approximately the same increase in income and reduction in unemployment as they achieved after they completed the course. This will not reduce the gross benefits found here, however, for the control groups include the workers who were placed in retraining-related jobs. Consequently the gross benefit has already been reduced to account for them.

Occupational Mobility out of Retraining-Related Occupations. Because an individual enjoys for one year increased income and reduced unemployment as a result of retraining, as was true of the workers who utilized retraining, it is a mistake to assume that the worker will continue to enjoy these benefits for the remainder of his working life. An extremely important limitation on the duration of retraining's benefits is the occupational mobility of the retrainees to non-retraining-related jobs. Twenty-four per cent of the workers in the sample who were originally placed in retraining-related occupations left them within one year after completing the retraining course. The moves of one fourth of these workers were to occupations which made use of some aspect of the retraining; still, 18 per cent of the workers placed in retraining-related occupations left for unrelated employment in the twelve months following their graduation. If this rate of mobility is projected five years after graduation, only 37 per cent of the workers who initially utilized the retraining would still be using it, and ten years after graduation only 14 per cent would still be utilizing skills learned in the course.

Such a projection doubtlessly leads to an overestimation of the future movement out of the retraining occupations. Other studies have shown that workers who dislike or are ill-suited to an occupation will leave it during the first several years. Reynolds found that the propensity to move "is slight after three years and negligible after ten years of work in the same plant."[1] Statistics on job tenure indicate that approximately 50 per cent of operatives have held the same job for more than five years, and 33 per cent for more than ten years.[2] Finally, Jaffe and Carleton estimated that one fifth of the workers who begin their working lives as operatives spend their entire working lives in this occupational category.[3]

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[1] Lloyd G. Reynolds, The Structure of Labor Markets (New York: Harper & Brothers, 1951), page 21.

[2] U.S., Bureau of Labor Statistics, "Job Tenure of American Workers, January 1963," Monthly Labor Review, by Harvey R. Hamel, Vol. 86, No. 10 (October 1963), 1145-52.

[3] A. J. Jaffe and R. O. Carleton, Occupational Mobility in the United States 1930-1960 (New York: King's Crown Press, 1954), page 56.

Consequently, a more conservative projection of occupation movement from the retraining occupations than that presented above will also be used. The 18 per cent rate will be adopted for the first three years, and for the following years it will be assumed that any movement out of the retraining occupation will be offset by workers who return to that occupation.[1] This use of a high and a low estimate is admittedly crude. However, no better projection technique presents itself. Also, in making any such type of forecast one must assume ceteris paribus, which increases the probability that a single prediction will be inaccurate,

Discount for Time Preference. The benefits that the worker receives from retraining accrue to him over a number of years. However, the decision to enter or not enter the retraining course is a question of the present. Thus, the present value of the benefits of retraining must be determined; the benefits must be discounted by the worker's rate of time preference.

It is impossible to calculate an average rate of time preference for the workers in the sample. Therefore, two possible measures of time preference are used as discounts. The first discount rate is 5 per cent, the approximate return the worker receives on his savings. The second discount rate is 15 per cent, the approximate interest rate the worker would have to pay to borrow the discounted value of the increase in income which results from retraining. It is assumed that the actual average rate of time preference for the sampled workers is within the range between these two rates.

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[1] Even during the first year following retraining, some of the workers first left the retraining occupations and then re-entered it. This was especially the case with the younger workers, who entered the armed forces or returned to school after completing the course.

The problem of time preference also includes the question of how long into the future the workers will take account of the benefits of retraining. It is doubtful that any workers who enter retraining calculate the resulting benefits for more than ten years. The workers realize that as time passes the assumption of ceteris paribus becomes weaker, and few would wish to predict their expected earnings with and without retraining for any extended period. Consequently, the ten year time horizon is used in this study.

The Net Benefits for the Worker Who Utilizes Retraining

The gross benefits of retraining for the average worker in the sample who utilized it were found to be reduced annual unemployment of five weeks and increased annual wage income of $500. It was also found, however, that approximately $100 or 20 per cent of the increment in income had to be paid by the worker in increased personal income and Social Security taxes. In addition, the worker's disposable income was reduced by another $100 because the reduction in his annual unemployment reduced the unemployment benefits that he could receive. Thus, the worker who utilized his retraining increased his disposable income by only $300.

Further, not all the benefits that these workers received could be attributed to the retraining. Approximately 19 per cent of the workers would have received the same benefits even had they not entered the retraining course. Consequently, the average annual benefit which can be ascribed to retraining should be reduced by 19 per cent.

Similarly, over time the retrainees were found to leave the retraining occupations. When this was done, any improvement in the worker's employment record could not be attributed to retraining. As a result, the average expected benefits of retraining decreased over time as the probability decreased that a worker would continue to use the skills learned in the course. The occupational mobility from the retraining occupations was found to be 18 per cent in the first year after the workers in the sample completed the retraining. For the purposes of this study it will be assumed that the same rate prevails between a constant 18 per cent for all years considered and an 18 per cent rate for the first three years with no movement in succeeding years.

Finally, since the benefits of retraining accrue to the worker over a number of years, the benefits must be discounted by the worker's time preference. Two rates were adopted, 5 per cent and 15 per cent, with the assumption that the actual average rate of time preference for the workers in the sample would be between these two values. The period of the discount will be the ten years following the worker's completion of the retraining course.

The Probability That a Worker Who Enters a Retraining Course Will Benefit from the Retraining

The analysis to this point has indicated that retraining led to substantial improvements in the employment records of the workers who utilized skills they had learned in the retraining courses. However, not all of the workers who entered the retraining courses made use of the course materials. Only 67 per cent of the men in the sample who entered the courses made use of skills learned in their work. The rest of the workers either withdrew from the courses (20.3 per cent) or upon graduation from the course found a job which did not require the retraining (13.0 per cent).[1] Thus the average worker in the sample who entered the retraining course had only a .67 probability of deriving the benefits of retraining. In addition, certain groups of workers had distinctly lower probabilities of deriving the benefits, as can be seen in Table V.

The proportion of workers who were over twenty-nine when they entered the retraining courses and who utilized retraining skills was 21 percentage points below that of youths under twenty, and 18 percentage points below that of workers under thirty. This lower utilization rate was primarily attributable to the many older workers who completed retraining but then took jobs which did not make use of retraining skills. Of the workers over thirty who entered the courses, 25.5 per cent took non-retraining-related jobs after graduation, while the corresponding proportion of workers under thirty was only 13.1 per cent.[2]

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[1] Approximately the same proportion of entrants to all M.D.T.A. programs did not utilize the retraining: in fiscal 1963, 22 per cent of the entrants did not complete the course and 13 per cent of the graduates were placed in non-retraining-related employment.

[2] Two explanations may be advanced for the lower rate of placement in retraining-related occupations of the older workers. First, the demand for older workers is not as great. Many companies place hiring restrictions on the number of men over forty. Second, older workers will not accept jobs which offer low wage rates because they

TABLE V - The proportion of Entrants in Each Training Status Category and the Proportion of Graduates Who Utilized the Retraining: by Age, Education and Length of Unemployment at the Time of Retraining for Men in the Sample.

CHARACTERISTIC	NUMBER OF ENTRANTS	UTILIZED RETRAINING[a]	COMPLETED BUT DID NOT UTILIZE RETRAINING	WITHDREW WITH EMPLOYMENT	WITHDREW WITHOUT EMPLOYMENT	PROPORTION OF GRADUATES UTILIZING RETRAINING
Age						
Under 20 years	71	71.8%	15.5%	2.9%	9.8%	82.2%
Under 30 years	176	67.6	13.1	6.2	13.1	83.8
30 years and over	51	51.0	25.5	15.7	7.8	66.7
40 years and over	13	46.2	53.8	0.0	0.0	56.2
Education						
Under 10 years	33	54.5%	15.2%	18.2%	12.1%	78.3%
Under 12 years	79	58.2	17.7	12.7	11.4	76.7
12 years and over	146	66.4	15.1	6.2	12.3	81.5
Unemployment						
None (at test)	38	78.9%	7.9%	5.3%	7.9%	90.9%
Under 5 weeks	76	69.7	18.4	5.3	6.6	79.1
Under 13 weeks	118	70.3	15.2	7.7	6.8	82.2
13 weeks and over	77	58.4	16.9	7.8	16.9	77.6
Over 26 weeks	39	56.4	20.5	5.2	17.9	73.3
Total Sample	227	67.0[a]	12.8	8.4	11.9	84.0

a. For the total sample the workers who were placed in retraining-related occupations NOT as a result of having taken the course were included in the "Utilized Retraining" category; for the other breakdowns they were included in the "Completed But Did Not Utilize Retraining" category.

Similar results were found for the sampled workers who had less than average educational attainment. Whereas 66.4 per cent of the workers who had high school diplomas when they entered the course utilized the acquired skills, only 54.5 per cent of the workers with less than ten years of education utilized their retraining.

Finally, the long-term unemployed did not have as high a placement rate as did the workers who were employed when they took the aptitude tests or the workers who had been unemployed less than one quarter prior to the beginning of the course. Of the latter two groups, 79 per cent and 70 per cent, respectively, utilized the retraining, while 58 per cent of those unemployed for more than one quarter and 56 per cent of those unemployed for more than twenty-six weeks made use of the retraining.[1] Thus, the older, less educated, or

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are accustomed to higher incomes earned in the past and they generally must bear greater family responsibilities. Since the retraining courses studied only prepared the workers to become learners in an occupation, the starting wages after retraining were often lower than those the workers had earned previously. This led the men to seek jobs that offered higher starting wages or to wait for former jobs to reopen. This may have been economically irrational, since the workers often did not take into account the reduced unemployment, greater overtime, and improved chances for advancement in the retraining occupations.

[1] Similar results have been reported for the entire M.D.T.A. program. Bureau of Employment Security, The Labor Market, August 1963, pp. 1-6.

In addition to age, education, and length of unemployment, twenty other variables which conceivably were determinants of training status were examined. A chi-square test was used to determine whether they were independent. At the .05 level, thirteen were found to be significantly correlated with training status. These variables were: the subject matter of the course; the labor market area in which the worker resided; and the worker's employment status at the time of the aptitude test; his eligibility to receive government aid during retraining and the amount he was eligible to receive; and, for the twelve months preceding the retraining, the amount of unemployment long-time unemployed worker would, on the average, have a lower probability of utilizing and benefiting from the retraining than would other workers who entered the retraining courses.

The Expected Benefits of Retraining for a Worker Who Enters a Retraining Course

The present value of the expected benefits of retraining to the individual worker who enters a retraining course are calculated on the basis of the following model:

$$IB_{pv} = \sum \frac{\left[(\Delta Y)\ (1-T)\ -\ (\Delta UNC)\right]\ \left[P_u\right]\ \left[1-P_1\right]}{(1+r)^t}$$

where:	IB_{pv}	is the present value of the expected benefits of retraining to the individual.
	t	is the time period, in years, since the completion of the retraining course.
	ΔY	is the change in earned wage income, which results from being retrained, of the workers who utilize the retraining.
	T	is the combined tax rate of the personal income and and Social Security taxes on the increment in income.

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benefits received and the amount of income earned. The time period between the aptitude test and the end of the retraining course, geographic, non-military moves between 1951 and 1960, trade union membership during the worker's last full-time job prior to retraining, and the presence of other members of the family earning income during the period of retraining, previous institutional training lasting for at least three months, and Connecticut State Employment Service labor force attachment category were also examined. Discussion of these variables and tables giving their distributions by training status may be found in Appendix D.

ΔUNC	is the change in government unemployment benefits received by the workers who utilize retraining.
P_u	is the probability that a worker who enrolls in a retraining course will utilize skills learned in that course.
P_1	is the probability that a worker who utilized the skills learned in the retraining will leave the retraining occupation in a given year.
r	is the individual's rate of time preference.

The values for the variables on the right hand side of the equation have been found in the preceding sections of this chapter: the worker's time horizon (t) was assumed to be ten years; the average increase in the annual wage income of the workers in the sample (ΔY) was $500; the combined personal income tax and Social Security tax rates on the increase in income (T) was approximately 20 per cent; the decrease in average unemployment benefits received by the workers in the sample (ΔUNC) was $100; the average probability that a worker in the sample who entered the retraining courses would utilize the course material (P_u) was .67; the probability that a worker would leave the retraining occupation (P_1) was .09 for the first year[1] and assumed to be either .18 for all of the succeeding years or .18 for the second and third years and then .0 for the succeeding years; and the individual's rate of time preference (r) was assumed to be either 5 per cent or 15 per cent per year.

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[1] The assumption is made that the workers left the retraining occupation at a constant rate during the year. Given this assumption, although 18 per cent of the workers have left by the end of the first year, on the average they spent one-half of the year in the retraining occupation. Therefore, the 18 per cent of the workers can be considered to get one-half of the benefits of retraining for the year and to lose one-half of the benefits for the year. Thus, the probable loss is only .09 for the first year after the retraining.

Because the last two variables mentioned have alternative values, four equations must be used to find the possible benefits of retraining. The equations are:

$$IB_{pv} = \sum_{t=1}^{10} \frac{\left[(\$500)\ (.80) - (\$100)\right] \left[.67\right] \left[(.91)\ (.82)^{t-1}\right]}{(1+.05)}$$

where the workers continue to leave the retraining occupation at the annual rate of 18 per cent and the workers' time preference is 5 per cent.

$$IB_{pv} = \sum_{t=1}^{10} \frac{\left[(\$500)\ (.80) - (\$100)\right] \left[.67\right] \left[(.91)\ (.82)^{t-1}\right]}{(1+.15)^{t}}$$

where the workers continue to leave the retraining occupation at the annual rate of 18 per cent and the worker's time preference is 15 per cent.

$$IB_{pv} = \sum_{t=1}^{3} \frac{\left[(\$500)\ (.80) - (\$100)\right] \left[.67\right] \left[(.91)\right] (.82)^{t-1}\Big]}{(1+.05)^{t}}$$

$$\sum_{t=4}^{10} \frac{\left[(\$500)\ (.80) - (\$100)\right] \left[.67\right] \left[(.91)\right] (.82)^{2}\Big]}{(1+.05)^{t}}$$

where the workers leave the retraining occupation at the annual rate of 18 per cent only for the first three years after the course and the workers' time preference is 5 per cent.

$$
\begin{aligned}
IB_{pv} = {} & \sum_{t=1}^{3} \frac{\left[(\$500)\ (.80)-(\$100)\right]\ \left[.67\right]\left[(.91)\ \ (.82)^{t-1}\right]}{(1+.15)^{t}} \\
& \sum_{t=4}^{10} \frac{\left[(\$500)\ (.80)-(\$100)\right]\ \left[.67\right]\left[(.91)\ (.82)^{2}\right]}{(1+.15)^{t}}
\end{aligned}
$$

where the workers leave the retraining occupation at the annual rate of 18 per cent only for the first three years after the course and the workers' time preference is 15 per cent.

The results of solving these equations are presented in Table VI. As seen in the table, the average expected benefit from retraining for a worker entering the retraining course, based on the experience of the workers in the sample, is between $433 and $835 for the ten years following the completion of the course, depending on the rates of occupational mobility and time preference.

TABLE VI: The Expected Annual Benefits of Retraining for the Worker Who Enters a Retraining Course, Discounted at 5% and 15%; by Probability of Leaving the Retraining Occupation

Year After Retraining	18% Probability of Leaving for Every Year	18% Probability of Leaving Only for First Three Years	18% Probability of Leaving for Every Year	18% Probability of Leaving Only for First Three Years
1	$174.20	$174.20	$159.05	$159.05
2	136.05	136.05	113.41	113.41
3	106.25	106.25	80.86	80.86
4	82.98	101.18	57.67	70.32
5	64.79	96.37	41.11	61.15
6	50.59	91.78	29.31	53.17
7	39.51	87.41	20.90	46.23
8	30.85	83.25	14.90	40.20
9	24.09	79.28	10.62	34.96
10	18.81	75.51	7.57	30.40
Total Benefits for the Ten Years	$728.12	$1,031.28	$535.40	$689.75

CHAPTER III

THE BENEFITS OF RETRAINING TO THE ECONOMY AND TO THE GOVERNMENT

The Objectives of Retraining for the Economy and the Government

The aggregate objectives of the retraining programs were indicated by Congress in the "Statement of Findings and Purpose" of the M.D.T.A.:

1. To increase the Nation's output
2. To reduce the aggregate level of unemployment
3. To reduce the costs of unemployment and public assistance
4. To reduce the burdens of unemployment for specific groups of the unemployed.

The first two objectives are the benefits for the economy. They also serve to delineate economic benefits for the government, in that a rise in GNP as a result of retraining increases tax revenues and any reduction in aggregate unemployment reduces government expenditures for unemployment benefits. Thus the third objective, which is not a benefit for the economy because it is merely a reduction in transfer payments rather than a real cost, is a benefit for the government.

The fourth objective is basically one of income redistribution and is not a direct economic benefit to either the economy or the government. However, an attempt to fulfill this objective will indirectly affect the economic benefits by affecting the percentage of workers who are placed. This will be discussed later in this chapter, after determining the economic benefits which presently exist.

Differences Between Individual and Aggregate Benefits of Retraining

Chapter II described the individual's economic benefits for retraining. Under certain conditions these benefits will be the same as those of the economy. These conditions are: a) that the retrainees do not replace other workers in the retraining occupations, meaning that unemployment is merely shifted from the retrainees to other workers, but that aggregate unemployment is reduced; b) that there are no other workers in the unemployed labor force who are able and willing, without entering the retraining courses, to fill the job openings in the retraining occupations, and who are displaced by the retrainees; c) that in the absence of retraining the labor force would not adapt to the labor shortages in the retraining occupations while the benefits still accrue to the individual; d) that there exist no unemployed workers who will fill the jobs left by the retrained workers when they enter the retraining occupations; e) that there are no secondary effects from the increase in income which results from retraining; and f) that the social rate of time preference is equal to that of the individual.

The following sections of this chapter will examine the conditions which existed at the time the workers in the sample were retrained. Unfortunately, the existence or nonexistence of some of these conditions cannot be proved conclusively. There is, however, circumstantial evidence in each case that indicates whether or not the conditions did exist.

Retraining for Occupations with Labor Shortages. The courses in which the men in the sample were retrained were sponsored by the state. However, with the exception of an A.R.A. course they have all subsequently been continued under M.D.T.A. sponsorship.

The Manpower Development and Training Act (Section 202[e]) states that "the Secretary [of Labor] shall determine that there is a reasonable expectation of employment in the occupation for which the person is to be trained." To meet this requirement of the Act, the Connecticut State Employment Service had to certify that the retraining occupations were faced with an inadequate supply of Labor before retraining could be undertaken. The State Employment Service based its judgment of the labor market on its experience over a period of time with job orders which it had found difficult to fill, on specific requests from employers for retrained workers, and on labor force questionnaires sent to employers.[1] Since the local offices constantly dealt with conditions in the labor market. it is a justified assumption that they were able to predict with reasonable accuracy where actual job openings existed.

The continuation of the courses during the approximately three years since the sampled workers were retrained is another indication that workers were not being displaced by the retrainees. If the State Employment Service had misjudged the demand for labor, with the result that regular workers were being displaced by the retrained workers, a feedback mechanism would have informed the Employment Service of its error, i.e. increased numbers of workers from the retraining occupation would have applied for unemployment compensation and aid in finding new jobs. Such an increase would have been especially evident to the State Employment Service if the displacement had occured in a situation where the retraining was designed to meet the needs of a specific employer. Presumably, once the displacement came to the attention of the State Employment Service the retraining program would have been revamped or terminated.[1] However, no changes have taken place, for the courses today are very similar to those taken by the workers in the sample.[2]

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[1] In Connecticut, employers were requested to estimate their employment needs for key occupations for the following two years. This was admittedly an inexact tool since it asked the businessmen to predict their needs on the basis of imperfect knowledge of the state of the economy and the demand for their product two years hence. It did serve, however, as a useful supplement for the State Employment Service, since some of the jobs would not be normally be listed with them.

The Existence of an Inadequate Supply of Trained Workers. As was shown in the previous chapter, workers who utilized the retraining were placed in jobs which offered considerably higher earnings and lower unemployment than the jobs that they would have taken had they not been retrained. If workers trained in these occupations were available in the unemployed labor force or among the unskilled employed labor force, it is reasonable to assume that the job openings in these occupations would not have been vacant for long periods. Yet, as mentioned above, a major criterion for determining the retraining occupations was the State Employment Service's experience that unfilled openings in these occupations continued to exist for long periods of time. Therefore a trained labor supply must not have existed among the unemployed or the underemployed workers at the time the workers in the sample were retrained.[1]

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[1] The programs, of course, could also have been terminated for reasons other than the placement of present workers. This was the situation in the case of the sewing machine operators course in Ansonia. This course was terminated for two reasons. First, it attracted many women who were interested not in employment but rather in the home uses of the course; and second, the training period proved inadequate to equip the women with the skills necessary to operate at the speed required in industry.

[2] With respect to the courses studied, another reason the retrainees did not displace other workers was that it would not be in the employers' interest to hire the retrainees for this purpose. The retraining courses were not highly specialized; their basic purpose was to familiarize the workers with the occupational environment. The retrainees were not trained long enough to adequately take the place of semi-skilled or skilled workers; most of them were placed as learners or apprentices.

That there was no trained labor force is also shown by the excellent placement record of the workers who completed the retraining courses. If trained workers had been available, it is doubtful that employers would have allowed their job openings to remain vacant for the many months between the preparatory surveys for the courses and the actual graduation of workers sufficiently retrained. The retrainees would not have been able to find jobs in the occupations for which they had been retrained if a trained labor force had been available. Yet, 84 per cent of the workers in the sample who completed retraining were placed in jobs which utilized the skills taught in the course.[2] In addition, many of the remaining 16 per cent were offered such jobs but did not accept them.[1] Thus, there was no problem in placing the retrainees when they wished to work in the retraining occupations.[2]

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[1] Even had trained workers been among the unemployed or underemployed, if there was a lack of communication between them and the employers with job openings, the openings would have remained vacant, even in the absence of retraining.

[2] The national average for M.D.T.A. graduates through May 19, 1963, was 87 per cent. U. S. Bureau of Employment Security, The Labor Market, August 1963, Table 1, p. 1.

Labor Force Adaption. Unfortunately, it is impossible to predict with any authority how long the labor shortage would have continued in any of the occupations studied, in the absence of the retraining program. However, even with the retraining program, labor shortages still exist three years after the courses were begun as is proved by the continuation of the courses to the present time and the continued successful placement of the graduates. Since these occupations had continuing labor shortages prior to the introduction of retraining, the labor shortages have now existed for five years; therefore, ten years would appear to be a minimum estimate of the time it would take the labor force to adapt to labor shortages in the retraining occupations. Since this estimate is the same as the maximum estimate of the workers' time horizon (in Chapter Two), the aggregate benefits of retraining cover the same time span as the period used to calculate the individual's benefits of retraining.

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[1] Most of the workers sought or were called back to jobs with higher wages. A few decided on completing the course that they did not care for the occupation.

[2] Another indication that a labor shortage existed in these occupations was the great amount of overtime work which was offered to the retrainees: following the course, 44 per cent of the workers who utilized retraining worked for more than 40 hours at least three quarters of the time they were employed. Almost all of the men were offered some overtime work; only 7 per cent did not work more than 40 hours at any time between the end of retraining and the interview. Overtime was particularly prevalent among the workers at the Electric Boat Company where all of the workers were encouraged to work six days a week.

The Existence of an Underemployed Economy. The extent to which retraining benefits the economy depends on how well the economy is utilizing its labor resources. If retraining the labor force merely upgrades individual workers without affecting aggregate employment, the effect of the retraining is to increase the G.N.P. only by the increment in the workers' output over their expected output in the absence of retraining. However, if aggregate employment is increased by retraining, either by placing an unemployed worker in an occupation with an inadequate supply of labor or by placing an employed unskilled worker in a semi-skilled occupation, and an unemployed worker in the newly created unskilled vacancy, G.N.P. will increase by the entire output of the retrained worker.[1]

For the workers in the sample the latter case appears to describe the conditions which prevailed. Seventy per cent of the workers who utilized the retraining were unemployed at the time that they took the aptitude test for the retraining courses and 7 per cent were not in the labor force at that time. The majority of the remaining 23 per cent of the workers who utilized retraining were employed in unskilled jobs which could easily be filled from among the unemployed. Thus, the average sampled worker's gross annual contribution to G.N.P. was not the $500 increment in wage income that he received, but $4,358.70 - - the total value of his output. The latter amount was the gross addition to production that resulted from the retraining.

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1. I am indebted to Professor Arthur M. Okun for bringing the distinction between these two cases to my attention.

The Multiplier Effect. Also, since the retraining took place in a less than fully employed economy, the increase in production and income undoubtedly had secondary effects which increased the benefits of retraining in real terms to the economy and the government. The selection of the magnitude of the multiplier coefficient which should be used to estimate these secondary effects is somewhat arbitrary. To make a conservative estimate of the benefits of retraining a multiplier coefficient of two will be adopted for this study; this multiplier is usually adopted when no induced investment is postulated.[1]

The Social Rate of Time Preference. Finally, the rate of time preference and the cost of capital may be considerably less for the government than for the individual. Two rates of time preference were adopted for the individual, 5 per cent and 15 per cent, the latter figure being the cost of capital to the individual. Eckstein estimates that the social rate of time preference is between 3 and 5 per cent,[2] and he and Krutilla estimate that the social cost of capital is approximately 5 per cent.[3] Thus, a conservative discount rate for the future benefits of retraining to the economy and the government is 5 per cent.

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[1] The Council of Economic Advisers estimated that the consumption multiplier is approximately 2, and the total transfer multiplier including induced investment is about 3. Council of Economic Advisers, Annual Report of the Council of Economic Advisers, Transmitted to the Congress, January 1964 (Washington, D. C.: U. S. Government Printing Office, 1964), pp. 171-72.

[2] Otto Eckstein, Water-Resource Development (Cambridge: Harvard University Press, 1958), pp. 99-104.

[3] J. B. Krutilla and O. Eckstein, Multiple Purpose River Development (Baltimore: The Johns Hopkins University Press, 1958), Chapter five.

Summary of the Differences Between Individual and Aggregate Benefits of Retraining. The foregoing sections have determined that there was no displacement of other workers by the retrainees, that there were no other workers able and willing to enter the retraining occupations without being retrained, and that the process of labor force adjustment to the labor shortages was so long that the benefits of retraining would accrue to the economy and to the individual for approximately the same length of time. Since these factors would cause the benefits of retraining to the economy to be lower than those to the individual, it can be concluded that the aggregate benefits are not less than those of an individual worker.

In fact, the aggregate benefits would be considerably larger than those of the individual, because the economy was and is operating at less than full employment. As a result of the underutilization of labor, the increment in real output due to retraining is the total value of the retrained worker's production times a multiplier coefficient. This difference greatly increases the aggregate benefits. Also increasing the aggregate benefits is the lower rate at which the future aggregate benefits of retraining are discounted. The social rate of time preference and cost of capital are below those of the individual. In all other respects the benefits to the economy and the government would be identical to benefits to the individual.

The Expected Benefits to the Economy of Retraining for Each Worker Who Enters the Retraining Course

The model used to determine the present value of the expected benefits of retraining for the economy per worker who enters a retraining course is:

$$EB_{pv} = \sum_{t=1}^{10} \frac{\left[(K)\ (\Delta Y')\right]\left[1-P_1\right]\left[P_u\right]}{(1+R)^t}$$

where:	EB_{pv}	is the present value of the increase in G.N.P. from retraining per worker who enters the retraining course.
	K	is the multiplier coefficient.
	$\Delta Y'$	is the average annual increment in output attributable to each of the workers in the sample who utilized the retraining.
	R	is the social rate of time preference.
and	P_u P_1	and t represent the same variables as they did in the model for the individual worker.

If the values of each of the variables found in the preceding sections of this paper are inserted into the model, two equations result (because of the alternative assumptions of the rate at which retrained workers leave the retraining occupations). The equations are:

$$EB_{pv} = \sum_{t=1}^{10} \frac{\left[(2)\ (\$4{,}358.70)\right]\left[.67\right]\left[(.91)\ (.82)^{t-1}\right]}{(1+.05)^t}$$

where the retrained workers continue to leave the retraining occupations at the annual rate of 18 per cent, and

$$EB_{pv} = \sum_{t=1}^{3} \frac{\left[(2)\ (\$4,358.70)\right]\left[.67\right]\left[(.91)\ (.82)^{t-1}\right]}{(1+.05)^{t}} +$$

$$\sum_{t-4}^{10} \frac{\left[(2)\ (\$4,358.70)\right]\left[.67\right]\left[(.91)\ (.82)^{2}\right]}{(1+.05)^{t}}$$

where the retrained workers leave the retraining occupation at the annual rate of 18 per cent for the first three years after retraining and then there is no further net movement.

The solution of each of these equations is presented in Table VII.

The Expected Benefits to the Government of Retraining for Each Worker Who Enters the Retraining Course

The model used to determine the present value of the expected benefits of retraining for the government per worker who enters a retraining course is:

$$GB_{pv} = \sum_{t=1}^{10} \frac{\left[(T)\ (K)\ (\Delta Y') + (\Delta UNC)\right]\left[P_u\right]\left[1-P_1\right]}{(1+r')}$$

TABLE VII

The Present Value of the Expected Benefits of Retraining to the Economy in a Less Than Fully Employed Economy, Based on Sample Data: by Rate of Movement out of the Retraining Occupations

Number of Years after Retraining	Annual Benefit When the Workers Leave the Occupations at a Constant Rate of 18 per cent Per Annum	Annual Benefit When the Workers Leave the Occupations at a Rate of 18 per cent in the First Three Years, Followed by no Net Movement
1	$ 5,061.91	$ 5,061.91
2	3,953.11	3,953.11
3	3,087.25	3,087.25
4	2,410.96	2,940.19
5	1,882.80	2,800.12
6	1,469.42	2,666.81
7	1,148.31	2,539.84
8	896.80	2,418.98
9	700.35	2,303.74
10	546.93	2,194.00
Total for the Ten Year Period	$21,157.84	$29,965.95

where: GB_{pv} is the present value of the expected increase in federal government receipts and decrease in unemployment payments which result from retraining, per worker who enters a retraining course.

r' is the cost of funds to the government.

and T, K, $\Delta Y'$, ΔUNC, P_u, P_1, and t represent the same variables as they did in the two previous models.

Again on substituting the previously determined values of these variables there are two equations. They are:

$$GB_{pv} = \sum_{t=1}^{10} \frac{\left[(.20)\ (2)\ (\$4{,}258.70) + (\$100)\right]\left[.67\right]\left[(.91)\ (.82)^{t-1}\right]}{(1+.05)^{t}}$$

where the retrained workers leave the retraining occupations at the annual rate of 18 per cent for all years considered, and

$$GB_{pv} = \sum_{t=1}^{3} \frac{\left[(.20)\ (2)\ (\$4{,}358.70) + (\$100)\right]\left[.67\right]\left[(.91)\ (.82)^{t-1}\right]}{(1+.05)^{t}} +$$

$$\sum_{t=4}^{10} \frac{\left[(.20)\ (2)\ (\$4{,}358.70) + (\$100)\right]\left[.67\right]\left[(.91)\ (.82)^{2}\right]}{(1+.05)^{t}}$$

where the retrained workers leave the retraining occupations at the annual rate of 18 per cent for the first three years following the completion of retraining and then there is no further net movement. The solution of each of these equations is presented in Table VIII.

TABLE VIII

The Present Value of the Expected Benefits of Retraining to the Government in a Less Than Fully Employed Economy, Based on Sample Data: by Rate of Movement out of the Retraining Occupations

Number of Years after Retraining	Annual Benefits When the Workers Leave the Occupations at a Constant Rate of 18 per cent per Annum	Annual Benefit When the Workers Leave the Occupations at a Rate of 18 per cent in the First Three Years, Followed by No Further Net Movement
1	$1,321.54	$1,321.54
2	1,032.05	1,032.05
3	806.00	806.00
4	629.46	767.60
5	491.57	731.05
6	383.89	696.23
7	299.78	663.09
8	234.10	631.54
9	182.81	601.46
10	142.78	572.80
Total for the Ten Year Period	$5,523.98	$7,823.37

The Effects Of Retraining Specific Groups of Workers On the Aggregate Benefits

The materials just presented indicate that retraining has led to substantial economic benefits for the economy and the government. The first three Congressional objectives for retraining are being fulfilled. The fourth objective of retraining as presented by the Congress is to provide the benefits of retraining to specific groups of the unemployed. Retraining is desired for workers who suffer disproportionately high levels of unemployment (youths, Negroes,[1] and workers with less than twelves years of education), workers who suffer the longest periods of unemployment (those over forty-four years of age), and workers who have family responsibilities.[2]

The Workers Who Presently Benefit from the Retraining. To date, retraining has not benefited all these groups. This can readily be seen if the characteristics of the male workers in the sample are compared with the characteristics of the male unemployed labor force or with the male population from which the retrainees came.[1] There are very significant differences in the characteristics of the two groups. Men over 30 years of age comprised 22.8 per cent of the sample, which was about one third of their proportion among the unemployed labor force (65.3 per cent). Similarly, only 32.4 per cent of the men in the sample did not have a high school education, whereas 59.8 per cent of the population over thirteen years of age did not complete high school, and a greater percentage of the unemployed did not achieve this level of education.[2]

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[1] Negroes will not be considered in this section because the number in the sample was too small to yield significant results.

[2] Hereafter these groups will be referred to as "the specified groups" or "the specified workers." In 1962 the unemployment rates of these groups nationally were: workers under 20 years of age, 13 per cent; Negroes, 11 per cent; and workers over 44 years of age, 40 per cent, of those unemployed 15 weeks and over. Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization and Training by the United States Department of Labor, transmitted to Congress, March 1963 (G. P. O. 1963), Tables A8, A10, A13, and B12, pp. 144-57. Workers with less than four years of high school, 8 per cent. Adapted from Denis F. Johnston, "Educational Attainment of Workers, March 1962," Monthly Labor Review (May 1963), Vol. 86, No. 5, Table 4, p. 507.

The relative youth of the sample was reflected in other characteristics too: 54 per cent of the sample workers were single while only 18 per cent of the civilian labor force had no family responsibilities; the percentage of entrants to the labor market was higher among the workers in the sample; among the experienced workers in the sample, 65.4 per cent were either unskilled or semiskilled, whereas only 46.1 per cent of the experienced unemployed were so classified; and the average income of the men in the sample for the twelve months preceding the beginning of retraining was $800 lower than that of the unemployed labor force. Finally, contrary to the expressed desire of Congress, workers who had been unemployed for more than fifteen weeks prior to the course were not represented in the sample in any larger proportion than in the unemployed labor force.[1]

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[1] Since statistics were not available for all characteristics of the unemployed labor force, figures for the male labor force and male population were also used. These statistics were taken from the U. S. Bureau of the Census, Census of Population 1960: Detailed Characteristics Report, Connecticut P. C. (1) - 8D, Tables 103, 115 and 116, pp. 103, 240, and 246, respectively. More comparisons are presented in Appendix C.

[2] The educational attainment of the unemployed was probably lower than that of the total population. In March 1962 for the United States as a whole, the median for years of education for the male population was 11.6 whereas for the unemployed it was 10.0. Johnston, Table 3, p. 506.

Possible Explanations for the Failure of the Specified Groups to Qualify for Retraining

Three reasons may explain why the older and less educated workers did not qualify for retraining:

1) Workers felt that a high level of educational attainment was necessary in order to meet the aptitude requirements for retraining.[2] Since the average older worker has a lower level of educational attainment, he is prevented from qualifying for retraining either by inability to pass the aptitude tests or by the belief that he will not be able to pass them, which keeps him from even applying for the courses.

2) Workers with few responsibilities are more inclined to take the risks of lost income during retraining and of the possibility that employment will not result from the course. The older workers,

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1. These comparisons are presented in Appendix C.

2. The aptitude requirements appear to have been very important in determining eligibility for the courses. The precentage of the workers who took the test and passed it varied greatly with the different tests and requirements, as indicated by the Connecticut State Employment Service records for the time period considered. In this study, the percentage who passed the test in each area for each course was: Bridgeport machine shop course, 36 per cent; Ansonia machine shop course (where lower standards applied), 64 per cent; Norwich pipefitter course, 77 per cent; New London pipefitter course, 83 per cent; Norwich shipfitter course, 40 per cent; New London shipfitter course, 54 per cent; and Ansonia sewing machine course, 75 per cent.

however, usually have families and must worry about their support. They feel that they are not able to accept the risks involved in retraining. Also, they may actually face a greater risk of not finding employment in which they can use the retraining, because many employers discriminate in their hiring against older workers.

3) The possibility of gaining an economic advantage from retraining is greater for young workers. Since he lacks skills and experience prior to retraining, and has significantly lower expected income in the immediate future, a young worker is more likely to improve his economic position by taking retraining than is an older worker. This is especially true if the older worker has some expectation of being called back to a former job in the immediate future.

The Effects of the 1963 Amendments to the M.D.T.A.

Similar findings and hypotheses on the national level led to the recent passage of the 1963 amendments to the Manpower Development and Training Act. To alleviate the problem that the specified groups might not be able to pass the aptitude tests required for the courses, the amendments provided for workers to have up to twenty weeks of remedial education before entering retraining. To reduce the likelihood that the specified workers might not have had sufficient financial incentive to apply for, enter, and complete the retraining program, the amendments increased the retraining allowances and the number of hours the retrainees could work while taking the course without suffering a reduction in their allowances.

The Effects of the Amendments (on Aptitudes). The effectiveness of the amendments cannot be positively predicted. It seems fairly clear, however, that the twenty-week limit on remedial education seriously restricts the possibility that many of the more poorly educated workers can be brought up to the aptitude levels which are required for the present courses. Officials of the Norfolk, Virginia, remedial education demonstration project, testifying before Congress on their experience, stated that their group of workers had advanced two years in reading ability during six months of training. This brought the group up to an eighth-grade level.[1] These officials stated explicitly, however, that it is very difficult to motivate workers to learn the basic skills unless these skills are directly tied to the retraining program, as they were for the demonstration project.[2] Since such a tie-in was not a part of the program outlined in the amendments, the improvement that may be expected from the twenty-week course is probably less than that achieved in the demonstration project. Moreover, even if two full years could be added to the workers' reading abilities, an eighth-grade educational level would not be sufficient to qualify them for most of the present courses which retrain for semi-skilled, skilled, and technical occupations.

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[1] Statement of Dr. William F. Brazziel, Jr., U. S. Congress, House of Representatives, Select Subcommittee on Labor, Committee on Education and Labor, Hearings, Manpower Development and Training Act, 88th Congress, 1st Sess., p. 106.

[2] Ibid., p. 105.

__The Effects of the Amendments (on Placing Retrainees)__. The effect of the amendments on aptitudes may be minimal. However, the amendments may actually reduce the benefits of retraining if they are completely effective in qualifying the specified workers for retraining. The amendments, which are primarily aimed at getting the workers into the program, assume that once workers have entered the courses they will derive the full benefits of retraining. This is an incorrect assumption. The sample data indicate that among the workers in these groups who qualify for the courses a large number do not complete the courses or do not utilize the skills taught. As noted in Chapter Two, among the older, less educated, and long-time unemployed, considerably lower percentages of workers use the retraining (see Table V).

Based on the percentages presented in Table V, if the workers in the retraining program had all been unemployed for at least 13 weeks the benefits to the economy and the government would fall by 12.8 per cent, if all the retrainees had less than ten years of education the benefits would fall by 18.7 per cent, and if they were over twenty-nine years old the benefits would fall by 23.9 per cent. Thus, to the extent that the amendments are successful in attracting the specified workers into the retraining program, the program's average benefits to the economy and the government can be expected to decrease.[1]

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[1] On the other hand, if all the workers in the retraining program were employed at the time they took the aptitude test for retraining, the benefits would increase by 17.7 per cent.

The Effects of the Amendments (on the Dropout Rate). It may be argued that the additional allowances provided by the amendments will increase the ability of the specified workers to complete retraining and improve their placement rates. Although this may be true insofar as some of the workers had to withdraw from the courses because of inadequate finincial support, there will be an offsetting effect which may, in fact, be stronger. The present graduates of the retraining courses have completed the courses without the benefits of increased allowances. Therefore, it can be assumed that they were the members of the unemployed labor force who were most highly motivated toward retraining. Increased allowances will attract many less highly motivated and less able workers to the retraining program, many of whom will not have the interest or ability necessary to complete the course successfully. Of the workers in the sample who were not eligible to receive government aid during retraining, 87 per cent completed the course. Only 70 per cent of the men eligible to receive more than $40 a week completed the course (see Table IX).

In addition, some workers who will be drawn to the courses by the higher benefits may find the courses an attractive way to increase their incomes while unemployed; they may never plan to enter the retraining occupation.[1] This is demonstrated by the fact that 86 per cent of the

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[1] Information provided in the interview bears out this hypothesis. In Ansonia, where the A.R.A. projects provided the workers with at least $37 a week in benefits, many of the workers said that they had entered the retraining program because they felt the retraining would not harm them, and that the benefits were higher than the unemployment compensation which they would have received had they not entered the course. This was especially true of the women who were in the sewing machine operations course. Many of them said that they had entered the course only to gain skills for home use.

TABLE IX - The Proportion of Entrants in Each Training Status Category and the Proportion of Graduates Who Utilized the Retraining, by Amount of Government Benefit the Worker Was Eligible to Receive During Retraining, for Men in the Sample.

AMOUNT	NUMBER OF ENTRANTS	UTILIZED RETRAINING	COMPLETED BUT DID NOT UTILIZE RETRAINING	WITHDREW WITH EMPLOYMENT	WITHDREW WITHOUT EMPLOYMENT	PROPORTION OF GRADUATES UTILIZING RETRAINING
			(Percentages)			
None	94	73.4	13.8	4.3	8.5	84.1
Less than $30	121	74.4	11.6	4.9	9.1	86.5
More than $29	87	49.4	23.0	12.7	14.9	68.2
More than $40	60	48.3	21.7	13.3	16.7	69.0

graduates eligible to receive less than $30 during retraining utilized the retraining skills, as opposed to only 68 per cent of the graduates eligible to receive $30 or more during retraining who utilized the skills.

The Effects of the Amendments (A Summary). The above findings indicate that there is a high probability that the 1963 amendments to the M.D.T.A. will reduce the proportion of workers entering the retraining programs who actually will use the skills taught in the course. If the amendments are successful in attracting the specified groups into the program, evidence to date suggests that proportionately fewer of these workers will be placed in employment which is retraining-related. Also, regardless of the effectiveness of the amendnents in attracting the specified workers, the increased allowances will attract other workers with lower motivation and therefore lower placement rates. Thus, the effectiveness of the retraining program in fulfilling its first three objectives will be reduced by the attempt to bring the high unemployment and long-term unemployment groups into the program; for, given an income constraint on the retraining program, the greater the effort to attract workers from the specified groups, the fewer will be the number of job vacancies filled in occupations of labor shortages, and the less will national output be increased and aggregate unemployment and unemployment costs be reduced. It appears, therefore, that there must be a trade-off between the first three objectives and the fourth objective.

An Alternative Proposal

Because the more effective the amendments are in achieving the fourth objective, the less successful will retraining be in accomplishing the other three objectives, an alternative approach is suggested. Given the budget constraint, the retraining program should not seek to operate on specific groups of workers but rather should concentrate solely on retraining and placing the greatest possible number of workers in occupations of labor shortages. Basically, this proposal is to attain the first three objectives to the highest degree, sacrificing the fourth goal when necessary. The retraining program should seek out workers who have the highest probability of being placed in the retraining occupations after the completion of the minimum amount of retraining deemed necessary for the trade. These workers should be chosen on the basis of their interest, abilities, and probability of being hired by the firms that have vacancies, and not on the basis of their employment status at the time of retraining; even employed workers should be selected for the program if their skill level would be raised by the retraining and if they could meet the aptitude and placement requirements.

This approach would not necessarily harm the hard-core unemployed. As the labor force is upgraded by retraining, unskilled job vacancies will be created which can be filled by these workers. If "Beveridgian full employment" could be achieved, the majority of the hard-core unemployed would eventually find work. Moreover, removing the fourth objective from the present retraining program, in which the problems of the specified groups are only one facet of a multipurpose program, would encourage the designing of specific programs to meet these workers' specific needs. To mention a few possibilities: equal opportunity laws would aid the Negro workers and older workers; improved adult education programs would help the more poorly educated workers; and federal aid to education might reduce the unemployment problems of youth. Thus, by focusing attention on the specific problems of these groups instead of trying to include them in a program not designed to meet their needs, the alternative approach would ultimately benefit them. It would also be of much greater benefit to the economy as a whole, because the retraining program would then be able to operate with maximum efficiency in those areas where it has proved highly effective: increasing the nation's output, reducing aggregate unemployment, and reducing the costs of unemployment and public assistance.

CHAPTER IV

THE COSTS OF RETRAINING

The costs of retraining must be calculated on a marginal or "with or without" basis just as the benefits were calculated.[1] Only those additional costs which would not have arisen in the absence of the program are considered. Thus, for the individual the costs of retraining are any additional expenses which he must incur to take part in the program and any reduction in his income during the course which results from his participation in it. Similarly, the costs of retraining for the government include only the variable costs of the State Employment Service and the vocational schools, since the high fixed costs for the buildings would exist even in the absence of the program.[2] Finally, the costs of retraining for the economy include any additional government expenditures on real goods and services which are necessary to operate the program and any loss in aggregate production which takes place during the course as a result of the reduced output of the retrainees.

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[1] For an explanation of this principle, see Eckstein, Water-Resource Development, pp. 51-52.

[2] Section 305 (a) of the Manpower Development and Training Act explicitly forbids the use of appropriations to build or improve physical facilities for retraining. However, it cannot be denied that the existence of these facilities greatly reduces the cost of retraining and those states with well developed vocational education programs (like Connecticut) enjoy distinct advantages in establishing retraining programs.

The Governmental Costs of Retraining[1]

Selection, Referral, and Processing Costs. The local offices of the State Employment Service perform a number of functions specifically for the retraining program, including: screening the files for possible retrainees, calling the selected workers in for counseling, initial counseling of these workers and any others who might be interested in retraining, aptitude testing of the interested workers, notifying those who qualify for retraining of their selection, post-selection counseling, referral to the retraining course itself, payment of retraining allowances during the course, and all of the record-keeping involved in performing these functions. With the exception of the costs involved in processing and paying the retraining allowances, the present procedure is for the federal government to reimburse the states at a standard rate for thirteen and one-half hours of time per worker enrolled in the course.[2] The costs of processing and paying the allowances are also reimbursed on a per enrollee basis; 20.25 minutes per week of the course are allowed.

There are two objections to this system of calculating costs. First, the number of workers to be enrolled is not the only factor which affects the State Employment Service costs. The longer the course, the more difficult the aptitude requirements, and the lower the ability of the unemployed labor force in an area, the greater will be the difficulty in enrolling a given number of workers in the course. More persons will have to be screened, counseled, and tested before enough workers can be found who are willing and able to take the course.[1] If administratively feasible, these other variables should be considered in the estimation of the cost of selection, referral, and processing.

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[1] Unless noted otherwise, the costs in this section are based on approved 1963 M.D.T.A. budgets for identical courses in the same areas as those which were taken by the sample.

[2] The time allotment is multiplied by the standard wage rate of the State Employment Service employee who performs these duties to get the actual cost. Additional non-personal expenses are also included for: supplies, communications, travel, O.A.S.D.I., group life insurance, and medical service provided by the state for its personnel.

Second, possibly because of failure to take account of these other variables, the state employment services have argued that an insufficient time allotment is presently being made.[2] Table X, below, gives the estimated time needed to enroll a worker in a machine shop course in Ansonia; the figures were submitted by the local State Employment Service office. This budget requests 15.44 hours per enrollee for all of the functions except paying and processing the allowances, 2.14 hours more than the standard allotment. It also requests thirty minutes for handling the retraining allowances instead of the 20.25 minutes allotted.

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[1] See footnote 2 on page 55 as an illustration of the importance of aptitude requirements in determining the number of workers who must be counseled and tested to select a given number of those who are qualified for retraining.

[2] Statement of Joseph J. Gibbons, U.S. Congress, Senate, Subcommittee on Employment and Manpower of the Committee on Labor and Public Welfare, Nation's Manpower Revolution, Part II (Washington: U. S. Government Printing Office, 1963), pp. 489-92.

TABLE X

The Estimated Personnel Time Required per Entrant for a Machine Shop Operations Course in Ansonia, Connecticut, by Function.

Function	Hours per Trainee
Initial Counseling	4.59
Testing	1.20
Issuing Nominations	.61
Responding to Nominations	.54
Referring Nominees	.17
Reports, Record Keeping, and Processing	8.33
Total	15.44

If the estimates presented in Table X are accepted as the true average times required per worker enrolled in retraining, the costs will not be appreciably affected. The average cost per enrollee in the sample,[1] including $3.15 for non-personal costs, would be raised by the more generous time allotments from $48.04 to $56.39.[2]

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[1] The costs for each of the courses were computed and then weighted by the percentage of the enrolled workers in the sample who participated in the given course.

[2] The changes in costs were based on a standard hourly wage rate for interviewers of $2.91 and an hourly wage rate of $2.68 for claims processors. The hourly wage rates differ slightly between local offices in accordance with the rank of the individual who handles these functions in the particular office.

The higher figure has been adopted for this study.[1]

Educational Costs. Educational costs are a function of the duration of the course to a much greater degree than are the State Employment Service costs. The largest item of educational expenses is instructor salaries. In Connecticut, instructors of vocational education are paid $5.00 per class hour. Since the average class contains approximately twenty retrainees, the average instructional costs per worker are twenty-five cents an hour or $7.50 for a thirty-hour week of instruction. The longer the course lasts, the greater will be the cost of instruction.

Similarly, the requirements for tool crib attendants and custodial staff are a function of the length of the courses. The weekly cost of these services was approxiamtely $1.50 and $.62, respectively, per worker enrolled in the course. The other costs -- supplies, supervision, utilities, and equipment upkeep -- appear to be dependent upon the subject matter of the course, rather than upon its length. Those costs totaled approxiamtely $7.43 per week for each worker enrolled.

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[1] It has been argued that none of these costs should be included as additional costs resulting from the introduction of the retraining program. The argument runs: "The function of the State Employment Service is to counsel and place workers. This is basically what is being done for workers interested in retraining. In the absence of retraining, approximately the same amount of time and effort would have to have been spent in placing these workers. Therefore, the State Employment Services are not really performing any additional services or services outside their normal scope of duties." This argument may very well be sound. However, it is difficult to prove that the same time would have been spent in the absence of the retraining, especially for underemployed workers. Therefore, the costs given here have been adopted, although there is the possibility that the costs are overestimated.

The average total educational cost per week was $17.05 for each of the workers in the sample who entered retraining. This estimate is based on the cost figures presented in Table XI.

Overall Administrative Costs. In addition to the local costs of administering the retraining program discussed in the preceding two sections, funds are also allocated for state-wide forecasting, planning, and evaluation. Approximately $38,000 was appropriated under the M.D.T.A. to the Connecticut State Departments of Labor and Education to perform these functions in fiscal 1963.[1] When this amount was divided by 1,733 Connecticut workers enrolled in retraining during that year, the average cost per worker was $21.56.[2]

Federal government administrative costs must also be included. In fiscal 1963, $3,463,000 was spent for program development and operations, and $825,000 was spent on program evaluation.[3] If these expenditures are multiplied by the Connecticut apportionment factor of 1.4 per cent,[4] the total share assigned to

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[1] Statement of W. Willard Wirtz, U. S. Congress, Senate, Subcommittee of the Committee on Appropriations, Labor-Health, Education and Welfare Appropriations for 1964, Part 1, 88th Cong., 1st Sess., pp. 48-49.

[2] These costs are somewhat overstated since projects for 3,330 workers in Connecticut were planned and approved during fiscal 1963.

[3] Wirtz, Senate, Labor . . . Appropriations 1964, p. 49. These figures do not include the Title I research expenditure as most of the research was not directly connected with the retraining program.

[4] Ibid., p. 236.

TABLE XI

Educational Costs per Worker Enrolled, for the Three Courses Considered in the Sample

	COURSE[a]		
EDUCATIONAL FUNCTION	Machine Shop Operations	Pipefitting	Shipfitting
Instructors' salaries	$ 66.67	$30.00	$30.00
Instructional supplies	20.00	20.00	20.00
Local Supervision and Clerical	10.69	4.50	4.50
Tool Crib	13.33	6.00	6.00
Equipment	16.67	1.75	.60
Utilities	5.21	3.00	3.00
Custodial Staff	5.56	2.50	2.50
Total Cost	$138.13	$67.75	$66.60

a. The machine shop course lasted eight weeks with an average class of 18, the pipefitter and shipfitter courses lasted four weeks with an average class of 20. The average length of the courses for the sample (weighted by number of entrants) was 6.2 weeks.

Connecticut is $60,032 and the average share per worker enrolled in Connecticut M.D.T.A. retraining courses during fiscal 1963 is $34.64.[1] When added to the state administrative costs, the total administrative cost per worker was $56.20.

Retraining Allowance Costs. Unlike the estimates of the other costs considered here, the marginal cost of retraining allowances cannot be equated with M.D.T.A. expenditures made under this heading. To judge the added cost of retraining, it is necessary to estimate the difference between the allowances paid under the program and the governmental unemployment benefits which the workers would have received in the absence of the program. Unfortunately, the M.D.T.A. expenditure figures take no account of the normal unemployment benefits which the government would have had to pay, but include instead all the allowances as a cost of retraining. Therefore, it is necessary to compute the added cost of the allowances. Using the original standards for receiving allowances,[2] the average added cost of the retraining allowances was $31.66 for the sampled workers. This added cost was computed by first determining the average unemployment benefits that each of the workers would normally have received had he not been enrolled in the retraining course. Then, in those cases where the unemployment benefit was less than $37 per week (the average unemployment benefit in Connecticut) and where the worker met the allowance requirements,[1] the differential times the number of weeks the worker participated in the course was taken as the added cost of retraining. For youths a minuend of $20 was used, though since the 5 per cent limit was not applied, these costs may be slightly overestimated.

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[1] See footnote 2, page 69.

[2] In order to be eligible to receive allowances, workers had to be unemployed, had to have three years of experience in gainful employment, and had to be heads of a family or household. If they met these requirements, they could receive an allowance equal to the average unemployment benefit in the state if the unemployment compensation which they would receive in lieu of retraining was less than the state's average. Workers between nineteen and twenty-one years of age who did not meet these requirements could receive an allowance of $20 a week, though no more than 5 per cent of the total retraining allowances could be paid to this group. Workers who were employed while participating in retraining, lost 1/40 of their allowance for each hour that they worked. "Regulations of the Secretary of Labor Relating to the Manpower Development and Training Act of 1963," Federal Register, Document 68-8552: Filed August 24, 1962.

The Effects of the Amendments on Governmental Costs (Retraining Allowances). When the amended standards for retraining allowances are applied to the sampled workers, the average cost rises by $29.14 to $60.80. The subsection of the amendments which has the greatest impact on the allowance costs that would have been paid to the sample is the extension of the youth benefits to workers under nineteen years of age. Sixteen per cent of the sampled workers who enrolled in retraining courses would have become eligible to receive additional benefits because of this provision. The average allowance for the sampled workers who enrolled in courses would have been increased by $14.35.

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[1] For the allowance requirements see footnote 2, page 71.

Nearly as important in terms of the percentage of affected workers and in added costs is the increase in allowance to $10 more than the average weekly unemployment compensation benefit in the state. Fourteen per cent of the enrolled workers in the sample would have received greater allowances than they were eligible to receive under the original Act. The cost for the sample would have been $11.15 per worker enrolled in the course.

Of relatively minor importance for the sample is the freedom of the retrainees to work twenty hours a week without affecting the amount of their allowances. Only 7 per cent of the sample would have been affected by this provision; the cost is estimated at $3.63 per worker.

Finally, the provision which lowered the number of required years of previous gainful employment from three to two years would not have affected any of the workers in the sample who enrolled in the course. The sampled workers who had only two years of experience were not heads of households or families. The requirement that, except for youths, the workers must be heads of households or families in order to qualify for retraining allowances, considerably restricts the amounts that the single men in the sample are eligible to receive during retraining. Ten per cent of those in the sample who were over twenty-one years old would have received additional benefits if this requirement had been dropped.[1] The cost for the sample would have been $15.20 per retrainee.[1]

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[1] Four per cent of the workers in the sample were over twenty-one years old and had three years of gainful employment, but could not qualify for any payments during the retraining because they were not heads of families or households, and were not eligible to receive unemployment compensation.

The Effects of the Amendments on Government Costs (Remedial Education). The amendments also provide for up to twenty weeks of remedial literacy training prior to the retraining course for workers who would otherwise not be able to participate. The cost incurred by implementing this section of the amendments is unclear. It depends on the percentage of workers who must receive such training before they enter the retraining program. If a twenty-week literacy course is postulated and the costs of this course per week are assumed equal to those for the retraining course, then this is equivalent to adding one week to the retraining course for each 5 per cent of workers who enroll who first must be taught in the literacy courses. Thus, if 10 per cent of the workers in the sample who enrolled in the retraining courses would have had to first undergo literacy training for twenty weeks, the average cost of the total retraining would have been raised by $90.00.[2]

The Effect of the Alternative Proposal on Governmental Costs. The adoption of the alternative proposal could possibly lead to lower government costs of retraining. If the "cream" of the labor force were to be attracted into the retraining program, it might be possible to shorten the duration of the courses. If the courses studied here had been shortened by one week, the costs of allowance processing would have been reduced by $134, the educational costs would have fallen by $17.05, the administration costs would have been lowered by $9.06, and the costs of retraining allowances would have decreased by $5.11[1] per worker enrolled in the courses. The total savings would be $32.56.[2]

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[1] This calculation was based on a maximum weekly allowance of $47, $10 more than the average unemployment compensation benefit paid in Connecticut.

[2] The assumption is made here that the selection and referral costs would rise proportionately.

The Governmental Costs of Retraining. A Summary. The government's costs of retraining the workers in the sample under varying types of programs are presented in Table XII. If the program is state-sponsored (as was the case for most of the courses studied) and no special allowances are paid other than the worker's normal unemployment benefits, the cost would be $218.30 per worker enrolled. Under the conditions of the original M.D.T.A., the cost per worker enrolled would be $249.80. However, if the alternative proposal were adopted, the cost for each enrollee would fall to $217.40. Finally, under the amended M.D.T.A., if 10 per cent of the enrolled workers must first go through a twenty-week literacy course the costs would rise considerably, to $369.16.

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[1] This figure is based on the unamended retraining allowances.

[2] The effect of the alternative on retraining allowances was not felt to be great. Presumably, retraining allowances would have to be paid to attract employed workers into the retraining program. However, this would be offset in part because some unemployed workers would move into their former positions and would no longer be eligible for unemployment compensation.

There would also probably be only a negligible effect on selection costs. Possibly more workers would have to be screened to select those with high probabilities of using the retraining, but probably fewer of these screened workers would have to be tested.

TABLE XII

The Governmental Costs of Retraining per Sampled Worker Who Enrolled in a Retraining Course, under Various Proposed Programs: By Type of Cost

	Cost per Enrollee			
Type of Cost	State-Sponsored Course without Additional Retraining Allowances	Unamended M.D.T.A.	Amended M.D.T.A. with 10% of the Workers Receiving Literacy Training	Alternative Proposal (one week shorter)
Selection, Referral, and Processing	$ 56.39	$ 56.39	$ 74.59	$ 55.05
Educational	105.71	105.71	139.81	88.66
Overall Administrative	56.20	56.20	74.34	47.14
Retraining Allowance	0.00	31.66	80.42	26.55[b]
Total	$218.30	$249.96[a]	$369.16	$217.40[b]

a. These costs are considerably lower than the average cost for the total M.D.T.A. program. Excluding administrative costs, the national average for fiscal 1963 was $1,230 per enrolled worker. The lower costs for the sample are due to the shorter duration of the courses in Connecticut and the different definition of retraining allowances used in this study, i.e. the federal statistics include all benefits paid to the worker during retraining, while this study includes only the marginal benefits above those the worker normally would receive when unemployed. In fiscal 1963, the average duration of the courses in Connecticut was 8.9 weeks whereas the average duration for the entire M.D.T.A. program was 21.6 weeks. (The average duration for the sampled workers was only 6.2 weeks.) The average total M.D.T.A. retraining allowance in Connicticut was $140 in fiscal 1963.

b. The retraining allowances used here are those provided under the unamended M.D.T.A. If the amended standards are applied the total costs would be $241.84.

The Economy's Costs of Retraining

The costs of retraining to the economy are probably less than those to the government, largely because there was little, if any, production lost during the retraining courses. As discussed earlier,[1] the majority of the workers were unemployed when they entered the course and most of those workers who were employed prior to the course were in unskilled jobs which could easily and readily be filled from among the unemployed. Thus, the only costs of retraining to the economy were the resources devoted to the retraining process. This would include the selection, referral and processing costs, the educational costs, and the administrative costs, for all of these represent the expenditure of real resources. The retraining allowances would not be costs to the economy because they are merely transfers. Therefore, the economy's costs of retraining would be between $26.55 and $80.42 less than the government's, depending on the type of program. The cost of retraining to the economy would be $190.85 for the alternative proposal, $218.30 for state sponsorship or the unamended M.D.T.A. program,[2] or $288.74 for the amended M.D.T.A. with 10 per cent of the workers receiving literacy training.

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[1] See page 45.

[2] The cost is the same under state sponsorship or under the M.D.T.A. if there is no literacy training because the only difference between state sponsorship and the M.D.T.A. program is the provision for additional retraining allowances under the M.D.T.A.

The Costs of Retraining to the Individual Worker.

Only two significant economic costs to the individual worker are involved in retraining: the transportation cost to and from the classes, and the cost of income lost during the course. The cost of transportation during the course depends on the distances which must be traveled and the available means of transportation. If the vocational school is located within the range of intra-city public transportation the costs will be $2 to $3 a week. If, however, inter-city travel is necessary, the weekly cost may be as high as $10. The average cost for the sample approximated $4 a week, or $25 for the entire course.[1]

The magnitude of the costs of lost income is determined by the worker's expected employment status and earnings if he does not enter the course. A worker who would otherwise be unemployed would actually increase his income by entering retraining. As noted above, under the amended M.D.T.A. the average worker in the sample who entered the retraining course would have received $9.81 more per week than his normal unemployment benefits. For a worker who expects to be unemployed during the retraining course, then, entering the course will increase his income by approximately $5.80 a week.

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[1] Connecticut has a very fine system of vocational schools located in most major labor markets in the state. Therefore, the workers in Norwich and Bridgeport could reach the schools on local transportation. The workers in Ansonia were provided with free bus service from the local State Employment Service office to the school in Bridgeport. The workers in New London, however, were forced to take public transportation to Norwich, which cost approximately $2 a day, or to drive their own cars. The greater expense of this last group, who comprised 25 per cent of the workers in the sample, raised the average cost of transportation of the sample by close to $2 a week.

At the other extreme is a worker who expects to be employed during the period of the course if he does not enter retraining. The opportunity cost of retraining would be much higher for him. If he could have earned $80 a week had he not entered the retraining, it would cost him approximately $26.80 a week to enroll in the course. This estimate is based on several assumptions: 1) The effective tax rate on his wage income would be 20 per cent so his disposable income in the absence of retraining would be $64. 2) If he entered the course the worker would receive the average weekly retraining allowance that workers in the sample would be eligible to receive under the amended M.D.T.A., $30.81. 3) He would earn $8.00 a week (minus $1.60 for taxes) from part-time employment, the approximate average earnings of the workers in the sample during retraining.[1] 4) Retraining would not add to his transportation costs.[2] If thses assumptions are granted, then the worker's cost of retraining would be approxiamtely $166 for the course.

Thus, the costs of retraining to the individual worker depend on his expectations of employment and income during the course. Costs can range from a minus $35 to a positive $166 or more, depending on the worker's expected earnings if he does not enter the course.

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[1] An exact figure for the sample's earnings while enrolled in the retraining courses could not be determined. Several of the workers' services could not be valued because they fell under the category of unpaid family work.

[2] It is assumed that the cost of traveling to and from retraining is equal to the cost of traveling to and from a job.

CHAPTER V

A COMPARISON OF THE BENEFITS AND COSTS OF RETRAINING[1]

The Benefits and Costs for the Individual

In Chapter Two the benefits from retraining derived by the worker were found to be dependent upon the rates of time preference and mobility chosen, and upon the characteristics of the workers. It was noted in the last chapter that the costs to the worker are dependent on the opportunity cost of entering the retraining course. Thus, a range of benefit-cost ratios can be found for the worker depending on his characteristics, his expected earnings and employment if he does not enter the course, and the values chosen for his rates of mobility and time preference.

At one extreme of this range is the worker who expects to be unemployed throughout the period of the retraining course, whether or not he enters the course. As determined in the last chapter, on a strictly economic basis the worker in this position would always enter retraining because the retraining allowances will raise his income while he is in the course by approximately $5.50 per week. At the other extreme is the worker who expects that he will be employed if he does not enter the course. He will lose income if he enters the course ($166 if his earnings were $80 a week). However, this worker too will enter the retraining course if his decision is based on strictly economic factors.

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[1] The benefit and cost comparisons of this chapter are all calculated per worker who enters a retraining course. All comparisons assume _ceteris paribus_ in defining the benefits of retraining.

The benefit-cost ratios for the average worker in the sample would be somewhere between 3.2 -- the ratio at a 15 per cent discount and a continuous 18 per cent rate of mobility -- and 6.2, the ratio at a 5 per cent discount and an 18 per cent rate of mobility for only the first three years. In addition, given the benefits received by the average worker in the sample, the worker would recoup his lost income at some time between the twelfth and thirteenth month after he completed the course.

The Benefits and Costs for the Government

The findings in Chapter Three were that the benefits for the government ascribable to retraining were also dependent on the rate of mobility from the retraining occupations chosen, and on the characteristics of the workers who were retrained. Similarly, in the last chapter it was found that the costs of retraining to the government depended on the organization of the retraining program. Table XIII presents the ranges of benefit-cost ratios which arise with different combinations of these variables.

It is immediately evident from this table that the retraining program is an economic investment which the government should undertake. Even when the costs of the program are raised by efforts to bring the hard-core unemployed into the courses, the benefit-cost

TABLE XII

Benefit-Cost Ratios for the Government by Type of Program, Rate of Mobility from the Retraining Occupation, and Characteristics of the Workers Involved

Program	Mobility Rate	Sample Average	30 years old and over	Less than 10 years of Education	Unemployed at least one quarter	Employed at the time of the aptitude test
State Sponsored	18% all years	25.31	19.26	20.58	22.07	29.79
	18% three years	35.84	27.27	29.14	31.25	42.19
Unamended M.D.T.A.	18% all years	22.10	16.81	17.96	19.27	26.01
	18% three years	31.30	23.81	25.44	27.28	36.84
Amended M.D.T.A. 10% in Literacy Classes	18% all years	14.96	11.38	12.16	13.05	11.60
	18% three years	21.19	16.12	17.22	18.47	24.94
Alternative Proposal	18% all years	25.41	19.33	20.65	22.15	29.90
	18% three years	35.99	27.38	29.26	31.38	42.36

ratios are at least eleven. This is not meant to imply that the government should attempt to get the hard-core unemployed to enter the courses, but rather that if the government for non-economic reasons decides that these workers should be retrained, then it incurs no loss as a result of the decision.[1] Based on the experience of the workers in the sample, by retraining workers, the government's revenues will be increased much more than its costs, almost regardless of the characteristics of the workers who are retrained.

The Benefits and Costs for the Economy

Finally, the benefits of retraining and the costs of retraining for the economy are dependent on the rate at which the retrainees leave the retraining occupations, the characteristics of the retrained workers, and the type of existing program. However, the magnitude of the benefit-cost ratios is so great that, regardless of which combination of variables is selected there can be no question that retraining is of tremendous value. (See Table XIV).

A Summary of the Comparison of the Benefits and Costs of Retraining

The analysis presented here indicates that the benefits and costs of retraining to the worker, to the government, and to the economy differ noticeably. In our present economy, with less

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[1] There is of course an economic loss in the sense that the government program could achieve a greater gain by reducing the costs and increasing the benefits through selection of more capable workers; i.e. the program will not be achieving optimal efficiency if the hard-core unemployed are retrained.

TABLE XIII

Benefit-Cost Ratios for the Economy by Type of Program, Rate of Mobility from the Retraining Occupation, and Characteristics of Workers Involved

		Characteristics of the Workers				
Program	Mobility Rate	Sample Average	30 years old and over	Less than 10 years of education	Unemployed at least one quarter	Employed at the time of the aptitude test
State Sponsored of unamended M.D.T.A.	18% all years	96.91	73.75	78.79	84.51	114.06
	18% three years	137.27	104.47	111.60	119.70	161.57
Amended M.D.T.A. 10% in Literacy Course	18% all years	73.27	55.75	59.57	63.89	86.23
	18% three years	103.78	78.98	84.37	90.49	122.15
Alternative Proposal	18% all years	110.86	84.37	90.14	96.67	130.48
	18% three years	157.01	119.48	127.65	136.91	184.80

than full employment, there are marked external effects resulting from retraining. This is demonstrated by the fact that the benefit-cost ratios of the government and of the economy are much greater than those of the individuals.

The analysis also shows that, based on the sample data, the benefits of retraining outweigh its costs to the individual, to the government, and to the economy. The high benefit-cost ratios enjoyed by each party suggest that retraining should be extended. Given the present costs of the program, as many workers as possible should be retrained for occupations with labor shortages because the net returns from retraining are so great.

CHAPTER VI

THE SPONSORSHIP OF RETRAINING

The Alternatives

There are three possible sponsors for the retraining program: the government, the individual who benefits from the retraining, and the firms with labor shortages. The analysis to this point has been concerned with the benefits and costs of the existing government retraining program and has disregarded the question of who should pay the costs of the courses. This question must finally be dealt with. The next two sections are concerned with the two alternatives to the present program.

Sponsorship of Retraining by the Individual

Milton Friedman suggests that the individual worker rather than the government should bear the costs of the retraining.[1] He argues that if retraining is worthwhile as an investment, the discounted future income of the worker will outweigh the cost of the course. Therefore, as in the case of physical capital, the individual should be willing to undertake all the costs of retraining.

The cornerstone of Friedman's argument appears to be the statement that: ". . . there are no obvious unborne costs or inappropriable returns that tend to make private incentives diverge systematically from those that are socially appropriate."[1] Although Friedman is logically correct in his argument, it is obvious from the benefit-cost ratios found in the preceding chapter that his premise is inaccurate. Even when the individual assumes none of the costs of the retraining courses, if he would otherwise be employed during the course, his benefit-cost ratio will be only between 3.2 and 6.2 whereas the ratio for the economy will be at least ten times greater.

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[1] Milton Friedman, Capitalism and Freedom, "Vocational and Professional Schooling," (Chicago: The University of Chicago Press, 1962), pp. 100-07.

The difference between the individual's and the economy's benefit-cost ratios would be even more apparent were the government not to provide retraining allowances and were the individual required to assume the $218.30 cost of the retraining.[2] If this were the case, the worker who expected to be unemployed during the course, would have costs of approximately $243,[3] and the worker who expected to be employed would have costs of approximately $445.[4] Given the average benefits for the workers in the sample, found in Table VI (page 38), the benefit-cost ratios would range between 2.2 and

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[1] Friedman, Capitalism . . . . p. 101.

[2] The assumption is make that the cost of retraining for the individual would equal the government's cost. This probably underestimates the cost to the worker since there are doubtlessly economies of scale, and if the retraining course was taught by private schools, there would be some additional cost for profit.

[3] The costs would include the $218 for the retraining itself and $25 for added transportation costs.

[4] This cost was found by adding the opportunity cost of lost income to the retraining costs. The former cost was calculated as follows: an average income of $80 was assumed if the worker did not enter the course; from this was subtracted $8, which was the average

4.2 for the former and between 1.2 and 2.3 for the latter.

Given a benefit-cost ratio of less than two for the individual worker, it is doubtful that many workers would undertake the costs of the retraining program. A worker with a ratio between 1 and 2 might not recognize that retraining would improve his position, and where the ratio was less than one, no improvement would occur. Also, the ratio does not take into account the risk that the worker runs that the _ceteris paribus_ assumption on which the ratio is based will not be valid. The introduction into the worker's calculations of a suitable discount for this risk would undoubtedly cause the ratio to fall below one for many workers. Finally, a worker might incur psychic costs by entering the retraining course, which could outweigh any small net economic benefit that would result from the retraining.

Thus, it is a reasonable assumption that if the burden of the costs of retraining were placed on the individual workers, many would not enter the courses. Yet at the same time the benefit-cost ratio for the economy would be unaffected by the change in sponsors and would remain greater than sixty. The logical conclusion is that individual sponsorship of retraining involves the possibility of a great loss to the economy, and this alternative must be ruled out.

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part-time earnings of the retrainees; then the taxes on the $72 differential were subtracted, which at a 20 per cent rate would be $14.40; finally, the unemployment benefits which were received by the sample, $21, were subtracted, to arrive at the figure of $36.60 per week in the course. This was multiplied by 6.2 weeks, the average for the courses studied, to get a total cost of $226.92.

Sponsorship of Retraining by the Firm

Although most of the retraining which presently occurs is paid for by private firms to train their labor forces,[1] the benefit-cost analysis demonstrated that the firms do not retrain to the extent that is socially optimal. In Chapter III it was explained that the occupations for which retraining was selected were only those in which vacancies had occurred over a long period. However, the economy's benefit-cost ratio for these occupations was estimated to be greater than fifty, proving that the retraining was indeed a worthwhile investment for society. These two facts provide sufficient evidence that retraining may be unprofitable for the firms experiencing labor shortages, while being quite profitable for the economy.

There are two possible explanations for the difference between the economy's gain from retraining and the firm's gain. First, as was the case for the individual, the economy benefits by the total value of the worker's output increased by the multiplier, whereas the firm receives only a portion of the worker's output. The gross benefit for the firm is the difference between the marginal revenue product of the worker and the increase in the cost of labor that results from the retraining. The size of this difference will be a function of the degree of competition for this type of labor. If the market is highly competitive, the wage level will approximate the worker's marginal revenue product: there will be little difference between the two to cover the costs of retraining.[1] In addition, the firm must pay either a corporate or a personal income tax on the difference which further reduces it.

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[1] A U. S. Department of Labor study found that 7.1 per cent of the workers surveyed were enrolled in some type of training program. This would mean that as many as five million workers are being trained each year by business, whereas only 150,000 workers will be retrained under the federal programs in fiscal 1964. U.S. Department of Labor, _A Report on Manpower Requirements, Resources, Utilization, and Training_, transmitted to Congress March 1963 (Washington, D.C.: U.S. Government Printing Office, 1963), Table F5, p. 197.

Second, the firm undertakes a greater risk with retraining than does the economy. After the workers are retrained they may leave the firm. Unless the retraining leads to an offsetting increase in the labor supply for the firm, the firm will not derive any benefits from the retraining once the worker leaves the firm's employ, although he may remain in the retraining occupation and benefits will continue to accrue to the economy.[2] Also, the risk of assuming ceteris paribus is greater for the firm than for the economy.

Therefore, the external effects suggest that in the marginal cases where continuing labor shortages exist, the economy cannot afford to leave the retraining decision to the firms with labor shortages, for the firms may not assume the responsibility and the economy's loss will be great. Thus, the government retraining program is necessary because in its absence the costs of retraining would not be assumed by either the individual worker or the firm, although the retraining would be beneficial to the over-all economy.

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[1] Thus, in a small firm using machine operators in Bridgeport there would be a very high probability that the worker would be attracted away from the firm if its wages were much below those prevailing in the area, because there are a multitude of firms in Bridgeport that desire machine operators. The Electric Boat Company on the other hand would take a much lower risk of a worker leaving, since they are a wage-setting leader in the New London area and there is no other demand in the area for shipyard workers.

[2] Further, a small firm may not be able to take the risks involved in retraining because it could train only a few workers but a large firm trains a great number. The large firm is able to spread the risk over many workers, whereas the small firm may find that it gains nothing from the retraining because the one or two workers it has trained subsequently leave the firm.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Summary of Findings

The examination of the experience of a sample of workers involved in retraining courses in Connecticut has led to the following findings:

1. The average annual gross income of the workers who utilized the retraining was \$500 greater than their expected incomes in the absence of retraining. The increase in income was primarily due to a five week reduction in their expected annual unemployment: the annual rate of unemployment of the workers who utilized the retraining fell by ten percentage points.

2. Several factors considerably reduced these benefits for the workers. First, it was estimated that approximately 20 per cent of the increase in the workers' incomes had to be paid in increased personal income and Social Security taxes. Second, because of the reduction in their annual unemployment, the workers who utilized the retraining also received a decreased amount of government transfer payments -- approximately \$100 per year less. Third, since the benefits will be derived over time their present value must be discounted by the time preference of the worker. The worker's discount for the time preference was assumed to be between 5 per cent and 15 per cent per year. This

discounting occurs over a period of ten years, which was assumed to be the worker's maximum time horizon. Fourth, the worker does not continue to derive the benefits of retraining unless he remains in the retraining occupation. Eighteen per cent of the sampled workers who utilized retraining had left the retraining occupation within a year of their graduation from the course. To the extent that the retrainees continue to leave the retraining occupations in future years, the average expected benefits will fall.

3. Not all of the workers who entered the courses made use of skills they had been taught. Only 67 per cent of the sampled workers who enrolled in the course subsequently made use of it. The percentages of the hard-core unemployed who used the retraining were even lower: 51 per cent for the workers thirty years old and older, 54.5 per cent for the workers with less than ten years of education, and 58.4 per cent for workers unemployed one quarter or longer.

4. Making use of the data presented above, the present value of the average expected benefits from retraining accruing to the worker who enters a retraining course was estimated to be between $535.40 and $1,031.28 for the ten years following his graduation from the course.

5. Factors were examined which might cause the aggregate benefits of retraining to diverge from the individual's benefits. It was found that the workers in the sample did not replace other workers in the retraining occupations or cause other workers not

to be employed in these occupations. Also, it was determined that the individual's calculations of benefits would not extend further into the future than the time necessary for the labor force to adapt to the occupations with labor shortages.

However, the existence of an underemployed economy caused the aggregate benefits to be much greater than those of the individual. The retraining led to an increase in aggregate employment, and the aggregate benefit of retraining was equal to the total value of the workers' production increased by any secondary effects, rather than to the increment in production which is the benefit to the worker. Also, following previous studies, the social rate of time preference was assumed to be less than the individual's rate.

6. Thus, the average present value of the expected benefits of retraining for the government, per worker enrolled in the retraining, defined as increases in tax revenues and decreases in unemployment transfer payments, and the average present value of the expected benefits of retraining for the economy, per worker enrolled in the courses, were much higher than the values for the individual. The estimated value for the benefits of the government was between $5,523.98 and $7,823.37 and for the benefits of the economy was between $21,157.84 and $29,965.95.

7. It was determined, however, that the 1963 amendments to the M.D.T.A., aimed at increasing the participation of the hard-core unemployed in the retraining program, would reduce the average benefits to the government and to the economy because less able and motivated workers would enter the course, workers less

likely to make use of the retraining. An alternative proposal was put forward that only those workers with high probabilities of utilizing the retraining should be selected for the program. Under this plan, the probability of using the retraining would be the only criterion for selection of the retrainees, and employment status specifically would not be considered.

8. The costs of retraining to the individual worker were dependent on his expected wage income during the period of retraining if he did not enter the course. For workers who would be employed and earning $80 a week if they did not enter the course, the cost of the retraining was estimated to be $26.80 for each week of the course. For workers who would not be employed during the retraining period if they did not enter the course, the retraining costs would be a negative $5.50 per week because the retraining allowances exceeded the workers' normal unemployment benefits. Consequently, it would be in the financial interest of these workers to enter the courses whether or not they planned to use the skills.

9. The costs of retraining to the government depended on the degree to which the retraining allowances were increased to attract the hard-core unemployed and on the extent to which the selection process increased or decreased the duration of the courses. Thus, for the retraining courses studied, the average cost to the government per worker enrolled was $218.30 when no additional allowances for retraining were paid, $249.96 when the unamended

M.D.T.A. allowances were paid, $369.16 when the amended M.D.T.A. allowances were paid and 10 per cent of the retrainees had to be given a twenty-week literacy course prior to the retraining, and $217.40 when the unamended M.D.T.A. allowances were paid and the courses were shortened by one week through the selection of more able retrainees.

10. The costs of retraining to the economy were the same as those to the government except for the retraining allowances, which were merely transfers. The costs to the economy of the different programs were: $218.30 when no allowance or the unamended M.D.T.A. allowance was paid, $288.74 when 10 per cent of the retrainees were given twenty weeks of literacy training, and $190.85 when the courses were shortened by one week.

11. The benefit-cost ratio of the average sampled worker who enrolled in a retraining course depended on the worker's expectations of wage income for the 6.2 weeks of the course if he did not enter the course. For the worker who expected to be unemployed during the entire period of the course, the ratio could not be calculated because the net costs of entering the course were negative -- the retraining allowances received were greater than the worker's normal unemployment benefits, the worker would inevitably improve his economic position if he entered the course. However, for the worker who had an opportunity cost of $80 a week, the benefit-cost ratio was between 3.2 and 6.2.

12. The government's benefit-cost ratio for retraining depended on the type of program the government selected to sponsor and the characteristics of the workers enrolled in the courses. With regard to the program chosen, the government's lowest benefit-cost ratio for the average worker in the sample was between 15.0 and 21.2 for the amended M.D.T.A. program, and its highest ratio was between 25.4 and 36.0 for the alternative proposal. As to workers' characteristics, the benefit-cost ratio for the government was lowest for the older workers -- between 11.4 and 16.1 with the amended M.D.T.A. -- and highest for workers who were employed at the time of the aptitude test -- between 29.9 and 42.4 when the alternative proposal was selected.

13. The economy's benefit-cost ratio for retraining was found to depend on the same factors as the government's ratio. However, it was considerably higher than the government's. The ratio for the average sampled worker who enrolled in the course was between 73.3 and 103.8 for the amended M.D.T.A. program, and between 110.9 and 157.0 for the alternative proposal. Thus, there were marked external effects involved in retraining, for the government's ratio could be many times that of the individual, and the economy's was many times greater than the government's.

14. A change in the sponsorship of the retraining courses was judged to be unwise. If the worker was asked to assume the costs of the retraining, the benefit-cost ratios would have been less than two and in some cases less than one. Given the other

factors that influenced the worker's decision to enter the courses, fewer workers would enter retraining when they had to assume its costs than would enter if the government assumed the costs. Yet the economy's benefit-cost ratio would remain extremely high, indicating that the retraining of these workers was of great social value.

Similarly, the assumption of the retraining costs by the firms that experience labor shortages would not be in society's interest. The present retraining program operates where labor shortages have existed for long periods, indicating that retraining under their auspices has not been considered profitable by the firms involved because of the risk that the worker would not remain with the firm after completing the retraining. Thus, the present program operates in areas where retraining would not otherwise occur, even though the gains to the economy would be significant. Since the external effects of retraining yield high social benefits when private benefits may be quite low; it is therefore proper and necessary for the government to assume the costs of the program.

Recommendations

Based on these findings, the following recommendations can be made:

1. Given full employment as an objective of the United States economic policy, and the present situation of high unemployment, retraining has proved to be a useful method to increase employment when occupations exist with insufficient labor supplies. Unlike

transfer payments to the unemployed or make-work projects, retraining leads to an increase in real aggregate output of goods and services desired by the economy (be they private or public goods). However, the effectiveness of the retraining program depends on the existence of job vacancies for which it is feasible to retrain members of the labor force. Therefore, aggregate demand must be kept at sufficient levels to provide a number of job vacancies, for which retraining is feasible, at least equal to the number of unemployed in excess of a "full employment" level of unemployment. The manner in which aggregate demand is stimulated can be determined through the political process and will depend on the preference of society for private or public goods.

2. Alternative methods of improving the labor market should be used in conjunction with retraining, since retraining is not a free good. These measures include an improved clearance system for the state employment services, relocation of the unemployed when desirable, and improved statistics on the nature and extent of job vacancies. The last-mentioned item is necessary not only for the retraining programs but also to facilitate the operation of the employment services.

3. Once the needs of the labor market are determined, and, if necessary, created through increased aggregate demand, the retraining program should be expanded to meet these needs. Such expansion will require a large scale revamping of the facilities

and curriculum of the vocational education system, to enable as many as one million workers to be retrained each year.

4. The retraining program should be carried out with the maxium possible efficiency. Workers should be selected on the basis of their ability to fill existing vacancies after a minimal amount of retraining. Efficient operation of the program will require that workers who already possess these skills be sought out and placed by the employment services prior to their undertaking the retraining program. Once this has been done, retraining should be offered to any worker who can be retrained and placed in the retraining-related occupation, regardless of the worker's employment status prior to the course. In this manner, the labor force will be upgraded to the greatest possible extent at the lowest possible cost.

5. Special attention should be given to the problems of certain groups among the unemployed for whom retraining will not be feasible, subject to the least-cost constraint. If aggregate demand is sufficient to create full employment, these workers will be absorbed into the unskilled occupations which have been vacated by the upgrading of underemployed workers. If, however, such occupations are felt to yield inadequate incomes to these groups, specific transfers may be made to them. In addition, specialized programs may be instituted to deal with the real problems that afflict these workers, e.g. employer discrimination, ignorance, or physical handicaps.

Appendix A -- Retraining in Connecticut

The Connecticut retraining program was selected for answering the research questions because Connecticut was one of the first states in the country to offer publicly supported classes specifically designed to retrain unemployed workers (as well as being the author's residence). Prior to any federal program, the State of Connecticut's Departments of Labor and Education, at the direction of the Governor, provided funds and sponsorship to initiate courses in two areas of the state -- Bridgeport and New London. The Bridgeport course, begun in May 1961, taught basic machine shop operations, skills determined to be in great demand by an area labor market survey. The New London courses were begun at the same time to retrain workers for shipyard trades. Trained workers were needed by the Electric Boat Division of the General Dynamics Corporation to expand their production of atomic submarines.

Courses in the two areas differed in one important respect. The retrainees for Electric Boat were told that they would be employed upon the successful completion of retraining (assuming that they were able to pass security and health examinations), while in Bridgeport they could not be guaranteed employment by any single employer or group of employers. Rather, they had to rely for employment on their own initiative and the placement services of the Connecticut State Employment Service. Hence, retrainees in Bridgeport ran a higher risk that retraining would not result in a job.

The experience gained from the state's pilot courses allowed the Connecticut towns of Ansonia, Bristol, and Danielson to be among the first in the country to qualify for retraining funds under the Area Redevelopment Act.[1] This Act, passed in May 1961, was the first federal venture into retraining the unemployed. It provided for the retraining of 25,000 workers in areas of "substantial and persistent unemployment," a classification that fit these three towns. The retraining courses begun under this Act in October 1961 differed from the earlier state program in the financial aid provided the retrainees. State courses permitted unemployed workers to collect the unemployment compensation to which they would have been entitled had they not entered the course. Those unemployed workers who had used up their credits, or who for some other reason were not eligible to receive unemployment compensation, received no government aid unless they qualified for relief. The unemployed in the A.R.A. courses, on the other hand, could choose between the unemployment compensation they would normally be qualified to receive, or a federal subsistence allowance of $37.00 a week (the average unemployment compensation benefit received in Connecticut). Thus, all of the retrainees in the A.R.A. courses received some government aid during their retraining; some retrainees in the state program received no aid.

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[1] Public Law 87-27.

During the first half of 1962, the program in Connecticut was expanded until by June 1, 1962, courses had been established in seven areas of the state, and 981 workers had entered a total of fifty-three classes.[1] Retraining in three of the areas was supported by the Area Redevelopment Act, and the courses in the other four areas were state supported. Upon the passage of the Manpower Development and Training Act of 1962 mentioned earlier, the state requested federal assistance for its state supported courses and proposed additional courses for the retraining program. Connecticut, however, did not wait for the federal funds to be appropriated, as did most other states. In July of 1962 the expanded program was put into effect under state auspices. As a result of its pilot program and its early start in retraining under the M.D.T.A., Connecticut had enrolled over two thousand workers in retraining courses in the first two years of the program and, by July 1, 1963, had placed more graduates of M.D.T.A. programs than any other state.[2]

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[1] Connecticut Labor Department, *Monthly Bulletin* (July 1962), page 9.

[2] U. S. Bureau of Employment Security, "Employment Service Spurs Job Placements of M.D.T.A. Trainees," *The Labor Market and Employment Security*, August 1963 (Washington: U.S. Government Printing Office, 1963), page 1.

Appendix B -- The Sample

The following procedures were used to select the sample for the study. First, the courses were chosen on the basis of the following criteria:

1. The sample was limited to workers who had been involved in the retraining program since its inception, because their longer work histories since retraining provided a meaningful period for the examination of the effects of retraining.
2. Courses selected were those offered in areas of both relatively high and low unemployment because the effects of retraining may depend upon the level of unemployment -- workers may be more easily placed in higher employment areas.[1]
3. Classes for women were included in the sample in order to evaluate the effects of retraining on them as well as on men.
4. Both A.R.A. and state-sponsored courses had to be included so the effects of providing subsistence allowances during retraining could be determined.
5. Finally, both courses where the retrainees were guaranteed a job with a specific employer and courses where no such guarantee was given were included in order to examine the influence of such job assurances.

By means of these criteria four courses were selected which had been conducted between May 1961 and March 1962, in four labor market areas having varying degrees of unemployment. The selected courses were:

a. The first five classes in basic machine shop operations for workers from Bridgeport: May 15 to December 8, 1961.

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[1] Unemployment, not seasonally adjusted, between May 1961 and May 1963, was about 6 per cent in Bridgeport: 9-12 per cent in Ansonia, until late in 1962, when it fell sharply; 3-4 per cent in New London; and about 9 per cent in Norwich.

b. The first two classes of the same course for workers from Ansonia: October 16, 1961, to February 28, 1962.

c. The first four classes in shipfitting for workers from New London and Norwich: September 6, 1961, to January 11, 1962.

d. The first three classes in pipefitting for workers from New London and Norwich: November 13, 1961, to January 12, 1962.

e. The two classes in power sewing machine operation for women from Ansonia: January 3 to March 16, 1962.

The sample population consisted of all the workers who were eligible to participate in these courses (i.e. all workers who had passed the General Aptitude Test Battery requirements prior to December 31, 1961, for the courses mentioned, except the sewing machine course where women were included if they had passed the test prior to March 1, 1962) with several minor exceptions.[1] Only workers who had qualified to enter the retraining courses were considered, in order to establish control groups which had demonstrated aptitudes comparable to those of the workers who completed and utilized their retraining.

The sample population consisted of 523 workers, of whom 48 per cent completed the retraining, 16 per cent withdrew from the program, and 36 per cent refused retraining after becoming eligible for the course. These averages, however, cover some notable differences that existed among the courses and areas. In Bridgeport, a considerably higher proportion of the sample population entered the course, but not because of an actual difference in the selection process for this course as compared with the other courses.[1] Rather, the names of those workers who had passed the aptitude tests prior to August 1, 1961, but did not subsequently enter the retraining course, were removed from the Connecticut State Employment Service files prior to the selection of the sample. Therefore, the workers who "refused retraining" for the first three classes in Bridgeport could not be included in the sample population. This should not affect the results of the study, however, because it would seem logical to assume that the workers who had refused retraining before August 1, 1961, did not differ significantly from the workers who refused retraining after that date.

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[1] The exceptions were: a) in Bridgeport, some of the test records for tests administered prior to August 1, 1961, were not available, b) again in Bridgeport, addresses were not available for several of the workers, and c) some of the workers eligible to enter these courses postponed retraining or entered other courses which are not being considered here.

In Ansonia, among the sewing machine retrainees, the opposite situation prevailed; a disproportionate number of the women refused the retraining. Here, the reason does not lie in the techniques used to select the sample population. Because of the poor response of employers to the first retrainees from this course, the course was discontinued after only two classes had been graduated. A backlog of applicants remained, who would have entered later classes and who consequently would have been dropped from the sample population if the course had been continued.

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[1] As of March 15, 1962, 35 per cent of those who were eligible for retraining in basic machine shop operations in Bridgeport did not enter the course. Bridgeport Office, Connecticut State Employment Service: Memorandum on Training, March 23, 1962.

TABLE B-1 -- The Percentage Distribution of the Sample Population by Area, Course and Training Status^{a}

Area and Course^{b}	Completed Retraining	Withdrew from Retraining	Refused Retraining	Proportion of Entrants who Withdrew from Retraining	Total Number
Bridgeport Machine	60.9	14.6	24.5	19.3	151
Ansonia Machine	39.2	23.0	37.8	37.0	74
New London Pipefitter	44.6	19.7	35.7	30.6	56
Norwich Pipefitter	38.[illegible]	21.3	40.4	35.7	47
New London Shipfitter	48.8	20.0	31.2	29.1	80
Norwich Shipfitter	63.2	2.6	34.2	4.0	38
Ansonia Sewing Machine	31.2	5.2	63.6	14.3	77
Totals	48.0	15.5	36.5	24.4	523

a. The trivariate classification system [illegible] used because placement information could only be obtained from the workers who were contacted.

b. In both New London and Norwich there [illegible] several workers who were eligible to enter either of the courses but refused retraining. They [illegible] assigned to both courses as separate observations.

The percentage of workers who withdrew from the retraining also varied between areas and courses. The highest dropout rates were found for the Ansonia machine operators and the Norwich pipefitters. The lowest rates were found for the Norwich shipfitters and the Ansonia sewing machine operators. Some of this variation can be explained by the State Employment Service's selection policies and by the nature of the particular courses. Thus, many of the Ansonia women were attracted to the course for its home uses and were highly interested in the course material. On the other hand, the men in the Ansonia courses were often attracted by the higher unemployment benefits they could receive if they participated in the retraining. They were not as highly motivated as were the women.

Also, more of the men found jobs during the course because

sewing machine course was only three weeks in duration. The same reasons do not appear to apply in the case of the shipfitters, however, since both the Norwich pipefitters and the New London shipfitters who participated in the same course and traveled the same distance, respectively, as the New London pipefitters, had dropout rates of approximately 30 per cent.

Of the 523 workers in the sample population, 373 were actually contacted for this study, i.e., 72 per cent. The great majority of the workers were personally interviewed; 342 workers were given the personal questionnaire found in Appendix F. The other 9 per cent of the workers could not be contracted in person, and information on their post-retraining experience was gathered by means of a mail questionnaire.

The response rate of the three training status groups was not quite identical: for workers who completed the retraining it was somewhat higher than for the other two groups. This was probably due to the fact that the retraining was carried on for job vacancies within the given labor market. Therefore, the geographic movement of workers who completed the retraining was lower than that of the other groups, and they were easier to reach for interviews.

The actual sample is broken into six categories by training status as shown in Table B-2 and B-3. Several interesting differences among the areas and courses emerge in this breakdown. First, the placement record of those workers completing retraining reflects the differences in the employment guarantees given to the shipyard retrainees. In both Bridgeport and Ansonia, slightly more than one third of the men completing the courses were not placed in jobs which made use of skills learned in the retraining courses. In Norwich, all except 6 per cent, and in New London, all of the workers who completed the courses were placed at the Electric Boat Company. Thus, 94 per cent of the men who completed but did not utilize the retraining were in the machine shop operations courses.[1]

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[1] The ratio of placements in retraining-utilizing occupations to workers completing the course was especially low for the women in the sewing machine course. As mentioned earlier, this was a major reason for discontinuing the course. Basically, the majority of the women had entered the course with employment as a secondary objective, so

Second, as found in Table B-1, Ansonia and New London had the highest rates of withdrawals; these two areas also had the highest ratio of withdrawals without employment to withdrawals for employment. In Bridgeport nearly two thirds of the workers who withdrew from the course had jobs, in Norwich more than one half had jobs, but in Ansonia, slightly under one third, and in New London less than one fifth of the workers who left the courses before completing them had an offer of employment.

Third, the proportion of men who refused retraining because they had found employment differed between the machine shop courses and the shipyard courses. For the former courses, 45 per cent of the workers who refused retraining did not have an alternative offer of employment: for the latter courses, only 24 per cent of the workers who refused retraining had no employment. This illustrates the greater risks involved in the machine shop retraining, where employment was not guaranteed upon the successful completion of the course.

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they were not too active in the pursuit of retraining-related jobs. Also, employers felt that the women were inadequately trained to meet the piece work minimum requirements.

TABLE B-2 -- The Percentage Distribution of the Sample by Area and Course, and Training Status

Area and Course	Total Number	Utilized Retraining	Completed but did not use Retraining	Withdrew for Employment	Withdrew without Employment	Refused for Employment	Refused without Employment
				(Percentages)			
Bridgeport Machine	110	44.5	22.7	9.1	5.5	10.0	8.2
Ansonia Machine	59	28.8	15.3	6.8	15.3	18.6	15.3
New London Pipefitter	33	54.5	0.0	3.0	12.1	21.2	9.1
Norwich Pipefitter	31	41.9	3.2	9.7	6.4	32.3	6.4
New London Shipfitter	49	61.2	0.0	2.0	10.2	22.4	4.1
Norwich Shipfitter	30	60.0	3.3	0.0	3.3	20.0	13.3
Ansonia Sewing	61	11.5	23.0	0.0	3.3	19.7	42.6
Totals	373	40.8	13.4	5.1	7.8	18.2	14.7

TABLE B-3 -- The Percentage Distribution of the Men in the Sample by Area and Course: By Training Status

Area and Course	Total Number	Utilized Retraining	Completed but did not utilize Retraining	Withdrew for Employment	Withdrew without Employment	Refused for Employment	Refused without Employment	Total
				(Percentages)				
AREA								
Bridgeport	110	33.8	69.4	52.6	22.2	19.6	31.0	35.3
Ansonia	59	11.7	25.0	21.4	33.3	19.6	31.0	18.9
New London	82	33.1	0.0	10.5	33.3	32.1	17.2	26.3
Norwich	61	21.4	5.6	15.8	11.1	28.6	20.7	19.5
Total	312	100.0	100.0	100.0	100.0	100.0	100.0	100.0
COURSE								
Machine	169	45.5	94.4	73.7	55.6	39.3	62.1	54.2
Shipfitter	79	33.1	2.8	5.3	22.2	30.4	17.2	25.3
Pipefitter	64	21.4	2.8	21.1	22.2	30.4	20.7	20.5
Total	312	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix C -- A Comparison of the Characteristics of the Sample and the Unemployed Labor Force in Connecticut

A major criticism of the retraining programs is that they do not benefit the long-term and hard-core unemployed. As discussed in Chapter III, many of these workers are not taking and passing the aptitude tests to become qualified to enter the retraining courses. This appendix compares the characteristics of the workers in the sample, all of whom qualified for the retraining courses, with the unemployed labor force in Connecticut from which these workers came. The comparison will indicate which groups among the unemployed have failed to qualify for retraining and will show whether or not the criticism of the retraining program is justified.

Sex. Almost all of the workers involved in Connecticut's first retraining courses were men. This imbalance in retraining was not a reflection of the proportion of women in the unemployed labor force. Of the unemployed at the time of the 1960 Census, 44.2 per cent were women,[1] 46.1 per cent of the insured unemployed in November 1961 were women,[2] and 49 per cent of the long-term unemployed claiming temporary extended unemployment insurance benefits in the state were women.[3] Yet only one course for women, the sewing machine course in Ansonia, was established prior to the M.D.T.A. program. In order to include female representation in the evaluation of retraining, all the women who passed the test for this course were included in the sample. As a result, 16.4 per cent of the sample are women and the remaining 83.6 per cent men.

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[1] U.S. Bureau of the Census, U. S. Census of Population: 1960, General Social and Economic Characteristics, Connecticut, Report PC (1)-8C, Table 52, page 88.

[2] U.S. Bureau of Employment Security, The Insured Unemployed in November 1961, page A9.

[3] U.S. Bureau of Employment Security, Family Characteristics of the Long Term Unemployed TEUC Report Series No. 5, page 13.

Race. It was found that 91 per cent of the sample were white and 9 per cent Negro. This indicates that Negroes became eligible for retraining (i.e. took and passed the aptitude test) approximately in proportion to their number among the unemployed in the state. The Census showed that in April of 1960, 8.2 per cent of the state's unemployed were Negro.[1] The proportion of Negroes in the sample varied somewhat in the different areas. In Bridgeport, 16.5 per cent of the sample were Negroes, while in Norwich only 2 per cent were Negroes. This variation is not significant, however, because of the small absolute numbers involved. The variation can probably be attributed to the greater percentage of Negroes among the unemployed in Bridgeport.

Age. Many of the other characteristics studied here -- including education, marital status, labor force attachment and number of dependents -- are correlated with the age of the workers. Therefore, it is of great importance that the age distribution of men in the sample was significantly different from that of the entire unemployed labor force. (See Table C1). The median age for men in the sample was more than fifteen years below that of the male unemployed labor force and nearly twenty years below that of the male civilian labor force. When compared with the men among the insured unemployed and the long-term insured unemployed, the youth of the workers involved in retraining is even more pronounced.[1]

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[1] Census: Social and Economic Characteristics, Table 53, page 89.

One reason for the exceptionally young age of workers in the sample was the employers' hiring requirements in Norwich and New London. An Electric Boat selection criterion was that the men be under forty or be "a young looking forty." This appears to be an important factor because, as shown in Table C-2, the age distribution of the sample varies significantly between these two areas and the Ansonia and Bridgeport samples.[2]

The age distribution for the women in the sample was quite different from that of the men. The women were much older and had a median age of 40.6 years. Also, unlike the men, their distribution by age approximated the distribution of the female unemployed labor force for the state as seen in Table C-3. The median ages of the two groups differed by only one year, an interval which is statistically not significant. The median age of the sample also closely approximated that 40.8 for the insured unemployed in March of 1962.[3] Therefore, we may conclude that the number of women who became eligible for retraining was proportionate to their age distribution among the

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[1] In March, 1962 the median age of the male insured unemployed was 41.1 years, and the median age of the male TEUC claimants in May and September 1961 and January 1962 was 30.7. Connecticut Labor Department Monthly Bulletin (December, 1962), page 5. Bureau of Employment Security, Family Characteristics, page 20.

[2] The male sample was divided between the machine shop and shipyard courses and into six-age groups: under 20, 20-24, 25-29, 30-34, 35-39 and 40 and over. The chi-square of this distribution was 21.45 with five degrees of freedom. This is significant at the .01 level.

[3] Connecticut Labor Department, Monthly Bulletin (December 1962), page 3.

TABLE C-1 -- Percentage Distribution of Males in the Sample, the Unemployed Labor Force,[a] and the Civilian Labor Force,[b] for Connecticut, by Age

Age	Sample			Unemployed Labor Force[a]		Civilian Labor Force[b]	
	Number	Per Cent	Cumulative	Per Cent	Cumulative	Per Cent	Cumulative
14-19	98	31.4	31.4	14.8	14.8	5.7	5.7
20-24	103	33.0	64.4	10.6	25.4	7.7	13.4
25-29	40	12.8	77.2	9.3	34.7	9.7	23.1
30-34	26	8.3	85.5	8.8	43.5	11.9	35.0
35-39	25	8.0	93.5	8.9	52.4	12.9	47.9
40-44	7	2.2	95.7	9.6	62.0	12.6	60.5
45-49	9	2.9	98.6	9.6	71.6	11.6	72.1
50-54	4	1.3	99.9	7.3	78.9	9.4	81.5
55-59	00	00		6.9	85.8	7.7	89.2
60-64	00	00		6.1	91.9	5.7	94.9
65 and over	00	00		7.4	99.3	4.7	99.6
	312						
Median age based on class intervals			22.82		38.65		40.83
Mean Age			24.95				

a. Bureau of the Census, U.S. Census of Population 1960 Detailed Characteristics Report PC (1) - 8D, Table 115, page 240.

b. Census, Detailed Characteristics, Table 116, page 246.

TABLE C-2 -- Percentage Age Distribution of the Men in the Sample by Age and Area

Age	New London	Norwich	Bridgeport	Ansonia
14-19	34.1	34.5	36.8	23.7
20-24	38.8	36.7	30.3	27.1
25-29	15.3	15.5	13.6	5.1
30-34	4.7	5.2	10.0	13.6
35-39	5.9	8.6	9.1	8.5
40-44	1.2	-	0.9	8.5
45-49	-	-	7.7	10.2
50-54	-	-	-	3.4
Median age based on class intervals	22.05	22.11	22.18	24.85
Mean Age	22.93	22.88	25.32	29.20

TABLE C-3 -- Percentage Distribution of Women in the Sample and Unemployed Civilian Labor Force by Age

Age	Sample		Unemployed Civilian Labor Force
	Number	Per Cent	Per Cent
[1]14-19	3	4.9	14.8
[2]20-24	7	11.5	10.4
[2]25-29	2	3.3	6.8
[3]30-34	8	13.1	8.8
[3]35-39	9	14.8	10.0
[4]40-44	12	19.7	11.5
[4]45-49	15	24.6	11.5
50-54	3	4.9	8.2
55-59	2	3.3	8.1
60-64	0	0.0	3.6
65 and over	0	0.0	4.0
	61		
Median age based on class intervals		40.61	39.60
Mean		38.03	

unemployed. Age was not an important factor in determining the women's desire to take or their ability to pass the aptitude test.

Youth by itself is probably not the causal factor in determining eligibility for retraining. As mentioned above, several characteristics are highly correlated with age. The factors include education, marital status, number of dependents, labor force attachment, skill level, and prior income levels. Some of these are likely to reflect the causal factors related to the youth of the men in the sample. Therefore, these characteristics will be examined next; first, for the men in the sample as compared with the unemployed male labor force, and then separately for the women in the sample as compared with the unemployed female labor force.

Education - Male. The educational attainment of the men in the sample was considerably higher (by 1.7 years) than that of the total male population of the state 14 years old and older. (See Table C-4). When it is considered that the educational level of the unemployed is usually lower than that of the population as a whole, the difference between the sample and the figures for the total population are even more significant.[1] Only about one third of the men who became eligible to take the retraining course had not graduated from high school, whereas 59.8 per cent of the population and an even greater percentage

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[1] 1. Median years of school completed for the unemployed males who were 18 years and older in March 1959 was 9.5 years; that for the total male labor force was 11.5 years. Arnold Katz, "Educational Attainment of Workers, 1959," Bureau of Labor Statistics Special Labor Force Report No. 1, Table D page A8.

TABLE C-4 -- Percentage Distribution of the Male Sample and the Male Population of Connecticut over 13 Years of Age[a] by Number of Years of Education Completed

Number of Years of Education Completed	Sample		Population	
	Percentage	Cumulative	Percentage	Cumulative
Less than 8	0.6	0.6	17.9	17.9
8	3.2	3.8	18.4	36.3
9	7.8	13.6	8.9	45.2
10	10.7	24.3	8.6	53.8
11	8.1	32.4	6.0	59.8
12	57.3	89.7	20.9	80.7
Over 12	10.4	100.1	19.3	100.0
Median number of years completed based on class intervals		12.27[b]		10.58
Mean		11.40[b]		

[a] Census, Detailed Characteristics, Table 103, page 302.

[b] There was a difference in educational attainment for the different areas studied. The workers in Norwich and New London had an average attainment of 11.65 years, while those in the machine shop courses had an average educational attainment of 11.18 years. The means for the four areas were Bridgeport 11.21, Ansonia 11.13, Norwich 11.64 and New London 11.66.

of the unemployed did not graduate. This finding leads to the conclusion that a great number of the male unemployed either will not take or cannot pass the aptitude tests for retraining because they lack the basic educational background which they or the Employment Service feel is necessary for retraining.[1]

Marital Status and Number of Dependents - Male. Other characteristics which are highly correlated with age are marital status and number of dependents. Again, it was found that the men in the sample were significantly different from the male civilian labor force and the long-term unemployed claiming T.E.U.C. benefits (TABLE C-5). A much larger proportion of the sample were single and a smaller proportion were married than in the other two groups. The sample also differed significantly from the national unemployed male labor force. In 1961, 36.4 per cent of the unemployed were single, 54.8 per cent were married and living with their wives, and the remaining 8.8 per cent were widowed, separated, or divorced.[2]

Information on the number of dependents for the unemployed

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[1] It should be noted again that there is a high correlation between age and educational attainment. The Census found 12.0 to be the median number of years of education completed for Connecticut males 14-24 years of age, not enrolled in school; for men 25 and over it was 10.5. Therefore it is impossible to assign complete causality to lack of educational background; other characteristics, also correlated with age, may be causal. However, the conclusion holds that poorly educated workers are not becoming eligible for retraining. Census, Detailed Characteristics, Table 102, p. 200.

[2] Jacob Schiffman, "Marital and Family Characteristics of Workers, March, 1962," Monthly Labor Review (January, 1963), vol. 86, No. 1, Table 4, p. 28.

TABLE C-5 -- Percentage Distribution of Men in the Sample, Civilian Labor Force,[a] and T.E.U.C. Claimants[b] in Connecticut, by Marital Status.

Marital Status	Sample	Civilian Labor Force	TEUC Claimants
Single	54.0	18.2	20.0
Married (wife present)	42.1	75.7	64.0
Other	3.8	6.1	16.0
	100.0[c]	100.0	100.0

TABLE C-6 -- Percentage Distribution for Men in the Sample by Number of Dependents Other than the Worker and for Families in the State by Number of Own Children under Eighteen Years of age plus Wife.[d]

Number	Sample Number of Dependents	Sample Per Cent of Dependents	Families - Wife plus Number of Children
1	35	33.6	42.6
2	11	10.7	18.8
3	22	21.1	19.8
4	15	14.3	11.2
5	21	20.2	7.5

a. Census, Detailed Characteristics, Table 116 page 246.

b. B.E.S., Family Characteristics, Table 58, page 34.

c. There was no significant difference in the proportion of the men who were married and single in the four areas.

d. Census, Detailed Characteristics, Table 109, page 226.

labor force is not available. The closest comparable data are the number of own children under 18 years of age for all families in the state. The comparison of the sample with these data leads to the conclusion that the men in the sample with dependents appear to have slightly more dependents than the population as a whole. However, the conclusion is open to question because of the relative non-comparability of the data, since the sample includes dependents other than own children under 18 such as parents and other relatives. This factor doubtlessly accounts for the slight difference between the two groups in Table C-6.

The positive conclusions that can be reached in regard to familial responsibilities of the sample are: 1) as expected from their younger age, a greater percentage of them are single than are the unemployed as a whole; 2) although the married men in the sample do not have a discernibly greater number of children, the larger proportion of single men in the sample causes the number of dependents per man to be lower than in the total unemployed labor force.

Prior Labor Force Attachment and Training - Male

A substantial proportion of the male sample were entrants to the labor force prior to training, as would be expected on account of the youth of the sample. The measure used to determine the labor force attachment of the workers was the occupational code on their Connecticut State Employment Service application cards in August 1962. The Employment Service had 28.1 per cent of the men classified as entrants.[1] By comparison, 3.5 per cent of the unemployed were not experienced as of April 1960, when the Census was taken.[2] Another indication of the low labor force attachment of the male sample is that 24.2 per cent of the men were in the labor force for less than one half of the year preceding the beginning of the retraining class for which they were eligible.

There was some variation in the proportion of entrants in the different areas. In the two areas of highest unemployment, Norwich and Ansonia, the percentages of the sample who were entrants were 10 per cent and 22 per cent, respectively. In Bridgeport and New London, the proportions of entrants were 35 per cent and 37 per cent, respectively. This difference seems to indicate that in areas of relatively low unemployment, it is usually entrants who become eligible for retraining. The difference, however, might result from varying procedures in each of the State Employment Service offices in bringing the application cards up to date.[3] The male sample had significantly

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[1] This closely agrees with the author's finding from work histories prior to the time of training that 27.9 per cent of the male sample were entrants to the labor force.

[2] The difference is probably not as large as is stated here because the Census includes only those without any work experience whereas the Employment Service definition includes those who have not had sufficient experience or training to successfully compete for these jobs. The percentage of entrants among the unemployed varies greatly from month to month in relation to the school year. However, it should be noted that the courses in three of the areas did not begin until the fall when the students among the unemployed labor force had returned to school and when the proportion of entrants among the unemployed had returned to the level where it remains during the school year. The national average for the winter months according to the Employment Service classification was about 12 per cent for 1961-62.

[3] The author, in a study of pre-training work histories, estimated that 28 per cent of the sample in Norwich were entrants to the labor

TABLE C-7 -- Percentage Distribution of Experienced Male Workers among the Sample, T.E.U.C. Claimants,[a] and Experienced Unemployed Labor Force in Connecticut in April 1960[b] by Skill Level

Occupation	Number	Sample[a] Per Cent	Experienced Unemployed Per Cent	T.E.U.C. Per Cent
Professional, Technical and Kindred	6	2.9	3.8	5
Service	6	2.9	7.3	10
Clerical and Sales	20	9.6	11.2	8
Skilled (craftsmen, foremen)	35	16.8	27.0	22
Semi-skilled (operatives)	73	35.1	29.7	23
Unskilled (laborers)	63	30.3	16.4	31
Others	5	2.4	4.6	1
Totals	208	100.0	100.0	100

a. B.E.S., T.E.U.C. Characteristics, page 62.

b. The Census data were adjusted to eliminate the 7.6 per cent who did not report their occupations. Census, Social and Economic Characteristics, Table 60, page 94.

c. Based on the first digit of the C.S.E.S. occupation code classification of non-entrants in August 1962.

lower skill levels than the male unemployed labor force. This is shown in Table C-7. The experienced workers in the sample had invested less of their time prior to training in learning a skill than either the unemployed labor force taken as a whole or the long-term unemployed claiming extended benefits. While 65.4 per cent of the experienced sample were either unskilled or semi-skilled, 54 per cent of the T.E.U.C. claimants and only 46.1 per cent of the total experienced male unemployed were within these groups.[1] Thus the training appears to have had the greatest appeal for men who were just entering the labor force or for those experienced workers who were not highly skilled, whereas the older, more highly skilled workers did not become eligible for the program.

Income for the Year Preceding Training - Male

Finally, the men in the sample had significantly lower incomes in the year preceding training (1961) than the Connecticut male unemployed labor force had in 1959. This is shown in Table C-8. Based on class intervals, the difference in the median incomes for the two groups is $817, and the difference in the mean incomes, $841.

This is offset in part, however, because the sample included only income earned from wages and salaries whereas the Census data include income from all sources. The largest proportion of other income received by the workers studied was probably unemployment compensation

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force. It is quite possible that in Norwich, the State Employment Service had reclassified the workers between the period of the course in late 1961 and August 1962 when the records were examined.

[1] There was some variation between areas in the skill levels of the experienced sample. The unskilled and semi-skilled formed 50 per cent, 56 per cent, 68 per cent, and 71 per cent in New London, Ansonia, Norwich, and Bridgeport, respectively.

TABLE C-8 -- Percentage Distribution of Men in the Sample by Earned Income for the Twelve Months Preceding the Beginning of Training and of the Unemployed Civilian Labor Force (Male), April 1960 in Connecticut by Total Income in 1959.[a]

		Sample		Unemployed 1960	
Income	Number	Per Cent	Cumulative	Per Cent	Cumulative
$0	40	16.3	16.3	8.3	8.3
1 - 999	46	18.8	35.1	19.0	27.3
1000 - 1999	40	16.3	51.4	12.9	40.2
2000 - 2999	42	17.2	68.6	13.4	53.6
3000 - 3999	40	16.3	84.9	14.8	68.4
4000 - 4999	19	7.8	92.7	13.1	81.5
5000 and over	18	7.3	100.0	18.0	99.5
Median Income based on Class Intervals		$1,914		$2,731	
Mean Income based on Class Intervals		$2,237[b]		$3,081	

a. Census, Detailed Characteristics, Table 137, page 398.

b. The true mean of the male sample was $2,113.71. The mean incomes in the four areas were Bridgeport $1,834.39, Ansonia $2,462.04, Norwich $2,427.48 and New London $1,970.10. Thus, the areas with the highest unemployment also had higher past incomes.

and other government aid. The median amount received by the men in the sample from these sources was $0.00. The mean amount based on class intervals was $389. If the mean unemployment benefit is added to mean earnings of the male sample, the new income is $2626, or $455 less than that of the unemployed population in 1959.[1]

Characteristics Associated With Age - Female

The most significant characteristic of the women was their low involvement in the labor force: 48.3 per cent of the women were not in the labor force when they took the aptitude test for training, 33.3 per cent had not been in the labor force at any time during the 12 month period preceding training, 60 per cent had been in the labor force for less than half of the same 12 month period, and 42.4 per cent had been in the labor force less than one half of the time since the end of the retraining course. Also, the income earned by the women in the sample was far below that of the unemployed female labor force and much more closely approximated that of the women who were not in the civilian labor force (see Table C-9).

That the course attracted women with low labor force attachment is further illustrated by the fact that a significantly greater proportion of the women in the sample were married and living with their husbands

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[1] The difference is slightly increased if account is taken of the general rise in wages between 1959 and 1961, the year preceding training for most of the sample. If a 2 per cent adjustment is made in the 1959 income, the income difference between the two groups rises to $516.

TABLE C-9 -- Percentage Distribution of Women 14 and Over -- by Earned Income for the 12 Months Preceding Training -- in the Sample, in the Unemployed Labor Force, and Not in the Labor Force in 1960 by Total Income for 1959.[a]

Income	Number	Percent	Unemployed[b]	Not in Labor Force[b]
$0	32	58.2	17.1	62.6
1 - 999	15	27.2	27.7	23.2
1000 - 1999	8	14.6	21.1	7.0
2000 - 2999	-	-	18.0	3.1
3000 - 3999	-	-	10.8	1.6
4000 - 4999	-	-	3.9	0.8
5000 and over	-	-	1.5	1.7
Total	55	100.0	100.0	100.0
Mean Based on Class Intervals		$355	$1571	$518

[a] Census, Detailed Characteristics, Table 137, page 398.

[b] See footnote 1 on page 128 for comparability of data. The median unemployment aid based on class intervals was $0.00 and the mean was $206.

than was the case among the female civilian labor force. (Cf. Table C-10). Since several of the single girls and the widowed women were living with their families and relying chiefly on them for their support, probably less than 20 per cent of the women in the sample were primary wage earners.[1]

Finally, the educational attainment of the women in the sample closely approximated the distribution of education among the female population of the state over thirteen years of age. Although the sample is more centrally clustered, the median ages, based on class intervals, are not significantly different and are, in fact, almost identical (see Table C-11).

The findings lead to the conclusion that the women who became eligible for retraining and who were included in the sample were more representative of the experienced female population who were not in the labor force than of the female unemployed labor force. Thus, prior labor force status seems to be an important factor in the determination of which women become eligible for retraining.

Industry[2]

The distribution of workers in the sample by the industries in which they were last employed does not appear to vary appreciably from that of members of the insured unemployed and long-term unemployed labor force (Table C-12). There is some problem in making the comparison

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[1] The small absolute number of primary workers prevents an estimate of the number of dependents for the women in the sample.

[2] Industry will not be discussed for the women in the sample because of their low labor force attachment. Such an analysis would not be meaningful since many of them had not worked for a number of years.

TABLE C-10 -- Percentage Distribution of Women for the Sample and for the Civilian Labor Force in Connecticut by Marital Status.[a]

Marital Status	Sample Number	Sample Per Cent	Civilian Labor Force (Per Cent)
Single	6	9.8	30.4
Maried (living with Husband)	48	78.7	59.8
Other	7	11.5	9.8
Total	61	100.0	100.0

TABLE C-11 -- Percentage Distribution of Women for the Sample and for the Population in Connecticut by Educational Attainment[b]

Number of Years of School Completed	Sample Number	Sample Per Cent	Sample Cumulative	Population Per Cent	Population Cumulative
less than 8	2	3.3	3.3	15.6	15.6
8	8	13.1	16.4	17.4	33.0
9	7	11.5	27.9	8.0	41.0
10	17	27.9	55.8	8.6	49.6
11	4	6.6	62.4	5.7	55.3
12	21	34.4	96.8	29.1	84.4
Over 12	2	3.2	100.0	15.6	100.0
Median based on class intervals		10.8		11.1	

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[a] Census, Detailed Characteristics, Table 137, page 398.

[b] Census, Detailed Characteristics, Table 103, page 202.

the proportion of unemployed construction workers varies with the seasons and this, in turn, affects the magnitudes of the other percentages involved. Thus, the Census data taken in April while the construction workers were still seasonally unemployed show a slightly lower level of unemployment in manufacturing than the other groups. If, however, the level of unemployment among construction workers were brought down to 18 per cent, there would no longer be a significant difference. Similarly, if the level of unemployment among construction workers in the data for the insured unemployed was increased to 18 per cent, the decrease in the proportion of workers in manufacturing and trade would lower their percentage to a level almost identical to that of the sample.

Once the adjustments are made, it becomes evident that prior industry attachment was not an important factor in determining retraining eligibility. There was not a significantly higher proportion of workers from a given industry eligible for retraining than there were workers among the unemployed from that industry.

Unemployment Prior to Training

As was stated earlier, not all of the sample were unemployed at the time they applied for retraining. Approximately one third of the workers were either employed (mainly the men) or not in the labor force (mainly women) at the time when they took the aptitude test for the retraining. Of those workers who were unemployed, about one fourth had been unemployed less than one month, one half less than three months, three quarters less than six months, and the remaining fourth for six months or longer (See Table C-13).

TABLE C-12 -- Percentage Distribution of Experienced Males in the Sample,[a] Unemployed Labor Force, April 1960,[b] Regularly Insured Unemployed, November 1961,[c] and T.E.U.C. Claimants[d] in Connecticut by Attachment to Selected Industries.

Industry Attachment	Sample Number	Sample Per Cent	Unemployed April 1960	Insured Unemployed	T.E.U.C. Claimants
Construction	23	17.7	28.0	11.0	16.3
Manufacturing	74	56.9	44.7	63.2	60.9
Service	13	10.0	9.6	8.8	6.5
Trade	20	15.4	17.7	17.0	16.3
	130	100.0	100.0	100.0	100.0

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a. Data taken from C.S.E.S. three digit occupational codes as of August 1962.

b. Census, Detailed Characteristics, Table 126, pp. 351-52.

c. B.E.S., The Insured Unemployed, November 1961, p. A8. No breadkown was made by sex so this figure gives the entire insured unemployed including women. This accounts for the higher percentage of service workers.

d. B.E.S., Family Characteristics, pp. 52-53.

TABLE C-13 -- Percentage Distribution of the Sample, Insured Unemployed, November 1961, in Connecticut[a] and Average National Unemployed Labor Force for 1961[b] by Duration of Unemployment

Number of Weeks Unemployed	Sample		Number of Weeks Unemployed	Sample	Insured	U.S.
	Number	Per Cent				
1-2	21	9.4				
3-4	36	16.1	1-4	25.5	30.0	39.5
5-8	38	17.0				
9-12	19	8.5	5-14	29.5	34.0	28.6
13-25	56	25.1	15 and over	45.0	36.0	31.9
26-38	26	11.6				
39-51	11	4.9				
One year or more	16	7.2				
	223	100.0				
Median based on Class Intervals		11.8 weeks			10.9 weeks	
Mean duration		13.1 weeks[c]				

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a. Connecticut Labor Department, The Monthly Bulletin (December 1961), page 13.

b. Carol Kalish, et al., "Labor Force and Employment in 1961," Special Labor Force Report No. 23, Bureau of Labor Statistics, page A41.

c. The mean durations of continuous unemployment for the areas were: Bridgeport 15.70 weeks, Ansonia machine 17.75 weeks, Norwich 9.52 weeks, New London 9.18 weeks and Ansonia sewing 8.86 weeks.

The distribution of the sample according to duration of unemployment approximates that of the insured unemployed in the state in November 1961: the difference in the median duration of the two groups was 0.9 weeks. This difference would probably have been less if the long-term unemployed who had exhaused their benefits were included among the insured. Thus, it appears that neither the workers' willingness nor ability to take and pass the aptitude tests were affected by their length of unemployment. Contrary to what might be expected, the long-term unemployed, although they had more to gain from retraining, did not become eligible for retraining in any greater number than their proportion among the unemployed.

National Origin

The number of foreign born workers in the sample was so small -- 7 -- that no statistically significant information can be found for this characteristic. According to the Census, 10.9 per cent of the population in the state is foreign born. However, nearly 40 per cent were either under 15 or over 65 years of age.[1] In spite of these relatively high proportions in the total population, national origin was not a significant factor in determining eligibility for retraining since neither the proportion of foreign born in the sample nor the proportion in the unemployed labor force was very substantial.

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[1] Census, Detailed Characteristics, Table 98, page 185.

Geographic Movement Prior to Training

The number of interarea moves made by the workers in the sample between January 1, 1951, and December 31, 1960, corresponds almost exactly to those made by the population of the state. The Census found that during the five-year period from 1955 to 1960, 15.9 per cent of the population had moved to a different county.[1] During the ten-year period studied for the sample, 32.4 per cent of the sampled workers had made at least one non-military interarea move, the same average number of moves per year as the total population. Although the unemployed may have somewhat higher mobility than the total population, the difference is probably not great. Therefore, mobility does not appear to be a significant factor in determining whether a worker becomes eligible for retraining.

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[1] Census, Detailed Characteristics: Table 100, p. 191.

APPENDIX D -- A Comparison of the Characteristics of the Sample by Training Status

A number of variables could conceivably affect the probability that a worker will enter, complete, and utilize the retraining once he has qualified for the course. This appendix compares the distribution of the workers in the sample by training status for each of these variables in order to test which demographic characteristics of the workers are correlated with training status. The significance of the correlation was tested by means of a chi square test at a .05 significance level.

Race

The race of the retrainees does not appear to be significant factor in the determination of training status, i.e., $X^2 = .12$ with one degree of freedom.[1] This is not significant at the .10 significance level. Table D-1 gives the breakdown of the sample by race and training status. The slightly higher percentage of Negroes who completed the course and lower percentage of workers who withdrew from the courses is not significant because of the small absolute number of Negroes involved.

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[1] The dropouts were omitted so that the cell frequencies would be greater than 10.

TABLE D-1 -- Distribution of the Sample by Race and Training Status

Training Status	White Number	White Per Cent	Negro Number	Negro Per Cent
Completed	160	52	18	60
Withdrew	41	13	2	7
Did not Report	103	34	10	33
Totals[a]	304	100	30	100

a. Sample total is less than 373 because race was not included on the mail questionnaire.

Sex

As was noted above, in reference to the differences in areas and courses, the women in the sample had an entirely different distribution by training status than did the men.[1] This is summarized in Table D-2. There was among the women 1) significantly less placement success on completing training, 2) a significantly greater proportion not entering the course, and 3) much less success for those who did not enter the course in finding jobs prior to the beginning of the training class to which they were assigned, compared to the men. Due to the differences in distribution by training

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[1] The chi square for Table D-2 was 68.02 with four degrees of freedom. To have acceptable cell frequencies, the "Withdrew for employment" and "Withdrew without employment" groups were combined.

TABLE D-2 -- Distribution of the Sample by Sex and Training Status (by Percentages)

Sex	Utilized retraining	Completed but did not Utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
Men	46.5	11.5	6.1	8.6	17.9	9.3	312	83.6
Women	11.5	23.0	0.0	3.3	19.7	42.6	61	16.4

status and the many characteristic differences found to be important in determining the eligibility for retraining (see preceding Appendix), the characteristics of the men and the women will be considered separately. The male sample will be examined first.

Characteristics of the Male Sample Which Varied Significantly with Training Status[1]

Age. The differences among the training status categories are shown in Table D-3 below. Using the six-classification breakdown and classifying the sample as under and over 30 years of age, a chi square of 13.36 was found. With five degrees of freedom this is significant at the .05 level. Also, at the .05 level, the mean age of the workers who utilized the training was significantly lower than that of the workers who completed but did not use the training and the mean age of the worker who refused retraining for employment was significantly lower than that of those who refused without employment. For the dropouts the mean age of those without employment was significantly lower than that of the other group of workers at the .10 significance level.[2] Therefore, it can be concluded that while age was not a factor in determining whether a worker would enter the

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[1] The independence of training status categories will be tested using chi square. A .05 significance level will be used to determine if the variation is significant.

[2] The standard error of the difference of the means was 1.53 years for those completing, 1.85 years for the dropouts, and 1.75 years for those not reporting for retraining.

TABLE D-3 -- Distribution of the Male Sample by Age and Training Status[a] in Percentages

Age	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Under 20	35.2	30.6	10.5	25.9	37.5	20.7	98	31.6
20-24	31.7	16.7	36.8	37.0	44.6	31.0	103	33.2
25-29	15.2	16.7	10.5	22.2	1.8	10.3	40	12.8
30-34	6.2	11.1	21.1	14.8	8.9	0.0	26	8.4
35-39	7.6	5.6	21.1	0.0	5.4	17.2	25	8.1
40-44	1.4	2.8	0.0	0.0	1.8	10.3	7	2.3
45-49	2.8	5.6	0.0	0.0	0.0	10.3	7	2.3
50-54	0.0	11.1	0.0	0.0	0.0	0.0	4	1.3
Total	46.5	11.5	6.1	8.6	17.9	9.3	310	100.0
Median age based on Class Intervals	22.35	25.80	26.30	23.25	21.40	24.75		
Average Age	24.00	28.67	27.42	23.48	22.68	29.21		
	24.93		25.11		24.91		24.95	

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a. The average age of the male sample was 24.95 years and the average age of the three training status groups -- those completing, dropping out, and not reporting for the course -- closely approximate the sample average, being 24.93, 25.11, and 24.91 years respectively. This is a good example of the three-category grouping covering differences that are found when training status is further defined.

TABLE D-4 -- Distribution of Men in the Sample by Education and Training Status (in percentages)

Years of Education Completed	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Less than 8	.7	0.0	0.0	3.7	0.0	0.0	2	0.6
8	5.6	5.6	10.5	7.4	0.0	6.9	16	5.2
9	6.3	8.3	21.1	3.7	5.5	13.8	24	7.8
10	10.5	13.9	15.8	11.1	7.3	10.3	33	10.7
11	9.1	11.1	5.3	7.4	5.5	6.9	25	8.1
12	58.7	52.8	42.1	59.3	69.1	41.4	177	57.3
Over 12	9.1	8.4	5.3	7.4	12.8	20.6	32	10.4
Totals	46.3	11.6	6.1	8.7	17.8	9.4	309	100.0
Mean	11.39	11.25	10.68	11.22	11.84	11.41		11.40
	11.36		11.00		11.69			

course and, if he did so, complete it, it was a factor in determining job status. Thus, an older worker was less likely not to take training because he got a job, was more likely to drop out of training because he got a job, and, if he completed the course, he was more likely to be placed in a job that did not result from the course or that did not utilize the skills learned in the course.[1]

Education. Educational attainment was found to be an important factor in the determination of eligibility for retraining. It was also a factor in determining training status. The chi square test of variation among the six training status groups was significant at the .05 level.[2] This was due to basic differences in education among the dropouts and "did not report" categories. Of the workers who withdrew for employment 52.6 per cent had not finished high school, but only 33.3 per cent of those workers who withdrew without employment had not finished. Of the workers who refused retraining, those who did get jobs prior to the course, 81.8 per cent had a high school education: 62.1 per cent of those who did not get jobs, had completed high school. (Also, the difference between the best educated group, and the least educated group was significant.)

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[1] The relationship between age and training status may result from a relationship between age and area. For the classifications which had the higher average ages a majority of the workers were from Ansonia and Bridgeport where the mean ages were somewhat higher than in Norwich and New London. See Table C-1 and Table C-2 in Appendix C.

[2] A chi square test of independence was made by dividing the sample by training status and schooling (less than 12 years or 12 years or more). $X^2 = 11.69$ with five degrees of freedom.

Thus, the poorer educated worker was less likely to enter training unless he first found a job; or, if he did enter, he was more likely to find a job and drop out than was the better educated worker.

Labor force attachment and status at the time of the test. It was noted in the preceding Appendix that 28.8 per cent of the male sample were entrants according to the Employment Service Classification System. These workers had a significantly different distribution by training status than the experienced workers had, as shown in Table D-5. The chi square value for the table, with five degrees of freedom, was 11.74, significant at the .05 level. The major area of difference lay among those who did not report for the course: of the entrants to the labor force, 87.5 per cent had jobs at the time when the course began (and this was the reason that they did not enter the course), while 55.5 per cent of the experienced workers had jobs at the beginning of the course.[1] Thus, the younger workers were less likely to take the course because they had jobs, while the experienced workers had other reasons.

Also, the proportion of the workers who withdrew for employment appears to have been lower for the entrants. While 12 per cent of the experienced workers who enrolled in the course withdrew with jobs, only 4 per cent of the entrants got jobs. Although this is not a statistically significant difference, it is of interest.

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[1] This difference is statistically significant. The standard error of the difference of the proportions is .11.

TABLE D-5 -- Distribution of Male Entrants by Training Status (in percentages)

	Utilized Retraining	Completed but did not Utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Entrants	45.2	13.1	2.4	7.1	28.6	3.6	84	28.8
Non-Entrants	46.2	11.5	7.6	7.2	15.4	12.0	208	71.2
Total	45.9	12.0	6.2	7.2	19.2	9.6	292	100.0
Per cent Entrants	29.0		20.5		32.1			

The labor force status at the time of the test[1] is also significantly correlated with training status, as seen in Table D-6. When the men were divided into groups of unemployed, employed, and not in the labor force, the chi square test yielded a result of 22.42 with five degrees of freedom. With five degrees of freedom this chi square is significant at even the .005 level.

There are several points of interest in Table D-6. First, 40 per cent of those who were employed when they took the test did not enter the training course because they had jobs (presumably the same jobs they had when they took the test).[2] This is many more than the 12 per cent of the unemployed who did not take the course because they became employed. Among the employed who did enter the course, however, 87 per cent completed the course and 79 per cent were placed in jobs resulting from and utilizing skills learned. These percentages are higher than among the unemployed (77 per cent and 71 per cent) and equal to or greater than among those formerly not in the labor force (89 per cent and 53 per cent).

Eligibility for and amount of government aid during retraining.[3] There was a significant difference between the training status groups in terms of eligibility to receive some type of government aid during retraining.

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[1] In the case of students who were taking the test while they were still in high school, the date was considered to be June 30.

[2] Some of the workers did not actually take the aptitude test specifically for retraining. They either took it in high school where it was given to all seniors or as an aptitude test for some other job, and their card was then included among those considered for retraining.

[3] Government aid includes: ARA retraining allowances, unemployment compensation, A.D.C., and any other federal, state, or local government payments received because of the worker's employment status.

TABLE D-6 -- Distribution of the Male Sample by Labor Force Status at the Time of the Test and Training Status (in Percentates).

Labor Force Status	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Unemployed	70.2	66.7	86.7	80.0	49.1	96.0	197	69.0
Employed	22.9	9.1	13.3	12.0	49.1	4.0	65	23.0
Not in Labor Force	6.9	24.2	0.0	8.0	1.9	0.0	20	7.0
Totals	46.4	11.7	5.3	8.9	18.8	8.9	282	100.0

See Tables D-7 and D-8. The value of chi-square with five degrees of freedom was 19.06 for Table D-7 and 23.00 with ten degrees of freedom for Table D-8.[1] The most marked deviations were among the workers who refused retraining for employment, who had significantly lower eligibility for retraining aid than the other groups. This lower eligibility was attributable to the fact that nearly all of them had jobs at the beginning of training (49 per cent even had jobs when they took the aptitude test). In order to become eligible for unemployment compensation during retraining, they would have had to quit their jobs and then wait for four weeks. The ineligibility for retraining allowances of these workers should not be construed, however, to mean that they were prevented from entering the course. If they really had been interested in retraining rather than in taking the jobs they did, most of the 51 per cent who did not have employment at the time of the aptitude test would have become eligible for retraining allowances. Thus, in this group, eligibility for retraining allowances was a result of training status and not a cause of it. That this was so is further implied by the fact that the workers who withdrew or refused retraining without employment did not have a significantly lower percentage of eligibility for aid during retraining than did the workers who completed the course. In fact, the percentage of eligibility was lowest in the group of workers who

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[1] The sample was divided into workers not eligible for aid, eligible for $1-$40 of aid, and eligible for over $40 of aid.

TABLE D-7 -- Distribution of Male Sample by Eligibility for Unemployment Benefits during Training and Training Status (in percentages).

Status	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Eligible	52.8	63.9	72.2	70.4	29.8	62.5	159	54.1
Not Eligible	47.2	36.1	27.8	29.6	70.2	37.5	135	45.9
Totals	48.3	12.2	6.1	9.2	16.0	8.2	294	100.0
Per Cent Eligible	55.0		71.1		40.8			

TABLE D-8 -- Distribution of Male Sample by Allowable Amount of Unemployment Benefits during Training and Training Status (in percentages)

Amoutn $	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
0	51.9	38.2	23.5	33.3	68.9	37.5	134	48.4
1-30	15.8	2.9	11.8	12.5	4.4	16.7	33	11.9
31-40	10.5	20.6	17.6	12.5	15.6	8.3	36	13.0
41-50	13.5	26.5	17.6	33.5	8.9	25.0	48	17.3
Over 50	8.3	11.7	29.4	8.3	2.2	12.5	26	9.3
Totals	48.0	12.3	6.1	8.7	16.2	8.7	277	100.0
Average	$18.05	$25.76	$34.59	$27.12	$12.38	$25.62	$20.53	
	$19.62		$30.21		$16.98			

utilized the retraining, though the difference was not statistically significant.[1]

The amount of government benefits that the workers in each category were eligible to receive is closely related to eligibility for benefits, and the inter-category differences are the same. Thus, of the workers who completed retraining the average for those who did not use the retraining was greater than for those who did use it (though not significant at the .05 level), the average for the workers who withdrew for employment exceeded that of the workers who withdrew for other reasons, and the average of the workers who refused without employment was higher than that of those who refused for employment.

Unemployment and the amount of government unemployment benefits (GUNB) received during the 12-month period preceding the beginning of the training course. The unusual situation of the workers who had jobs when they refused retraining, with respect to eligibility for unemployment benefits received during retraining, stands out also in regard to unemployment prior to retraining. For the 12 months preceding the beginning of retraining, their average period of unemployment was about 8 weeks shorter and the average amount of GUNB received was more than $300 less than the average of the sample as a whole. Similarly, the average duration of continuous unemployment for these workers prior to retraining was nearly eleven weeks less than the average of the sample. Owing to these large deviations, the chi square tests on all three variables were significant at the .05 level.[1]

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[1] Some of the workers in the course did not receive allowances because they had jobs during non-retraining hours.

There were also, however, differences among the other groups which accounted for the significance of the chi squares. The workers who refused retraining or withdrew from retraining without employment had considerably greater previous unemployment than those who completed the course: from four to seven weeks more. Also noteworthy was the fact that the average GUNB for the twelve months preceding retraining was much higher for those who dropped out of the course than for those who completed it. The mean for those who completed was \$466.08 while that of the dropouts was \$631.46 a difference of \$165 for the year.

Others in family unit[2] working at time of retraining. Another factor which correlated with training status was whether other members of the family were providing income to support the worker and his dependents during the retraining period. Tables D-12 and D-13 give the distributions of the training status categories in light of this variable. After combining the two groups who withdrew

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[1] Table D-9 was divided into those with less than one quarter unemployment and workers with more than one quarter. The $X^2 = 17.78$ with five degrees of freedom. Table D-10 was divided into workers with no unemployment, less than one quarter unemployment, and more than one quarter unemployment. $X^2 = 68.08$ with ten degrees of freedom. Table D-11 was divided into workers receiving no unemployment benefits and workers receiving some benefits. $X^2 = 17.03$ with five degrees of freedom.

[2] Family unit includes the worker, his wife if married, and children or others dependent on him for support. The worker is always considered to be the head of a family unit even in the case of a teenager living with, and possibly being supported by, his parents.

TABLE D-9 -- Distribution of the Male Sample by Weeks Unemployed in the Twelve Months Preceding the Beginning of Training and Training Status
(in percentages)

Number of Weeks Unemployed	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
0	13.1	16.7	13.3	0.6	42.3	0.0	45	17.4
1-4	23.7	20.0	6.7	21.1	21.2	9.5	53	20.5
5-12	24.6	16.7	33.3	10.6	15.4	28.5	56	21.6
13-25	16.4	20.0	20.0	26.3	11.5	42.9	49	18.9
26-38	9.8	13.3	20.0	15.8	9.6	5.8	28	10.8
39-52	12.3	13.3	6.7	26.3	0.0	14.3	28	10.8
Total	47.1	11.6	5.8	7.3	20.1	8.1	259	100.0
Mean	14.65	15.67	14.60	22.84	6.31	19.48		14.08
	14.85		19.20		13.39			

TABLE D-10 -- Distribution of the Male Sample by Number of Weeks of Continuous Unemployment Prior to the Beginning of Training and Training Status (in percentages)

Number of Weeks Unemployed	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
0	16.3	16.1	12.5	0.0	85.2	4.2	75	27.3
1-4	25.6	29.1	12.5	23.8	3.7	16.7	55	20.0
5-12	23.3	12.9	37.5	14.3	1.9	29.2	50	18.2
13-25	17.8	16.1	25.0	28.6	3.7	33.3	48	17.5
26-38	8.5	16.1	12.5	9.5	5.6	4.2	24	8.7
39-51	3.1	3.2	6.2	19.0	0.0	0.0	10	3.6
52 or more	5.5	6.5	0.0	4.8	0.0	12.5	12	4.7
Total	46.9	11.3	5.8	7.6	19.6	8.7	275	100.0
Mean	13.84	16.87	13.56	20.29	2.31	21.92		13.10
	14.43		17.38		8.34			

TABLE D-11 -- Distribution of the Male Sample by Unemployment Benefits Received in Twelve Months Preceding Beginning of Training and Training Status (in percentages)

Amount in Dollars	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
0	51.7	50.00	21.4	31.6	70.0	36.4	127	50.6
1-250	12.7	7.1	28.6	15.8	12.0	9.1	32	12.8
251-500	8.5	10.7	7.1	10.5	14.0	4.5	24	9.6
501-1000	7.6	17.8	14.3	21.0	4.0	40.9	31	12.4
Overr1000	19.5	14.3	28.6	21.0	0.0	9.1	37	14.8
Total	47.0	11.2	5.6	7.6	19.9	8.8	251	100.0
Mean ($)	471.61	425.93	588.36	662.68	97.18	495.68		415.24
	462.85		631.15		218.94			

TABLE D-12 -- Distribution of the Male Sample by Others in the Family Working at Time of Training and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
Others Worked	16.5	32.4	11.8	8.3	7.7	24.0	47	16.5
No Others Worked	24.8	14.7	58.8	33.3	32.7	36.0	82	28.8
No Others in Family Unit	58.6	52.9	29.4	58.3	59.6	40.0	156	54.7
Total	46.7	11.9	6.0	8.4	18.2	8.8	285	100.0
Percent no Others in Family	57.5		46.30		53.2			

TABLE D-13 -- Distribution of the Male Sample with More than One Person in the Family Unit by Others in Family Unit Working at Time of Training and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Others Worked	40.0	68.8	16.7	20.0	19.0	40.0	47	36.4
Others did not work	60.0	31.2	83.3	80.0	81.0	60.0	82	63.6
Total	42.6	12.4	9.3	7.8	16.3	11.6	129	100.0

from retraining to provide a sufficiently large theoretical cell frequency, the chi square for Table D-12 was 19.92. This chi square is significant at the .05 level with eight degrees of freedom. Table D-12 also shows that a considerably lower percentage of workers who withdrew from retraining for employment, had no others in the family unit than the other groups. Also, as seen in Table D-13, among dropouts who had other members in the family unit, a lower proportion of those others worked. Finally, the workers who completed but did not use the retraining with other family members, had a higher proportion of these family members who were working: the proportion was 32 per cent above the average for the male sample.

The time period from test to end of retraining.[1] Table D-14 shows the distribution of the sample by the approximate number of weeks between the time they became eligible for retraining and the end of the retraining course in which they had or would have enrolled. It is significantly different for the six groups.[2] When the sample was divided into those with less than nine weeks and those with nine weeks or more, chi square was 17.41 with five degrees of freedom. The correlation between training status and the time period involved was negative, as is seen in the averages for the groups. As the time period increased, the likelihood of entering and completing the course fell. Thus, whereas about 42 per cent of the did-not-reports had a period of more than ten weeks to wait before the end of training, the proportion was only about 31 per cent for the dropouts and 29 per cent for those who completed.

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[1] In the case of those who took the test in high school, June 30 was used as the date of the test.

[2] Because the shipyard courses lasted 4 or 4-1/2 weeks while the machine operations course lasted from 4 to 8 weeks, and more of the workers who completed but did not use the retraining and the workers who withdrew from retraining for employment were in the machine course, their time period from test to end of training would be longer than for the other groups.

Mobility. Movement between labor markets during the 1951-61 period is shown in Table D-15 below. The table was divided into those who had moved and those who had not moved during the period, and the chi square with five degrees of freedom was 17.81. It appears that the dropouts were more mobile than the other groups and that the workers not utilizing the retraining were particularly immobile.

Trade union contract. The existence of a trade union contract in their last place of employment also varies significantly with training status. As seen in Table D-16, $X^2 = 13.20$ with five degrees of freedom.

Prior training. To determine whether prior institutional training varied significantly with training status, Table D-17 was tested for independence and the chi square with five degrees of freedom was 10.40. This is significant at the .10 level but not at the .05 level. The differences arise with in each part of the three category breakdown. The workers who used the retraining and those who withdrew from or refused retraining for employment included higher proportions of workers with training than did their respective counterparts.

TABLE D-14 -- Distribution of the Male Sample by Number of Weeks from the Test to the End of Training Class and Training Status (in percentages)

Number of Weeks	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
3-6	20.0	27.8	5.3	16.7	10.7	14.7	53	7.5
7-8	32.9	16.7	15.8	29.2	21.4	7.1	76	25.1
9-10	17.1	30.6	31.6	20.8	25.0	39.3	71	23.4
11-14	20.0	19.5	27.4	20.8	28.5	32.7	74	24.4
15-and over	10.0	5.6	0.0	12.6	14.3	7.2	29	9.5
Total	46.2	11.9	6.3	7.9	18.5	9.2	303	100.0
Mean	9.38	9.06	10.37	9.88	10.62	10.39		9.77
	9.31		10.10		10.54			

TABLE D-15 -- Distribution of the Male Sample by Number of Moves between January 1951 and December 1960 and Training Status (in percentages)

Number of Moves	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
None	65.2	88.2	41.2	52.0	74.5	60.7	198	66.7
One	23.9	8.8	47.1	32.0	21.8	35.7	74	24.9
Two or More	7.2	2.9	11.8	16.0	3.6	3.6	25	8.4
Total	46.5	11.4	5.7	8.4	18.5	9.4	297	100.0
Average	.49	.14	.71	.68	.29	.43		
	.42		.69		.34			

TABLE D-16 -- Distribution of the Male Sample by Trade Union Contract on Last Job and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Trade Union Contract	44.0	66.7	41.7	14.3	27.3	33.3	64	41.0
No Trade Union Contract	56.0	33.3	58.3	85.7	72.7	66.6	92	59.0
Total	48.1	13.5	7.7	9.0	14.1	7.7	156	100.0
Per Cent Trade Union Contract	48.96		26.92		29.41			

TABLE D-17 -- Distribution of the Male Sample by Previous On-the Job Training Lasting Three Months or Longer and Training Status

	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
Previous Training	32.3	52.9	58.8	33.3	43.1	28.0	106	38.1
No Previous Training	67.7	47.1	41.2	67.7	56.9	72.0	172	61.9
Total	45.7	12.2	6.1	8.6	18.3	9.0	278	100.0
Per Cent with Previous Training	36.65		43.90		38.16			

Factors Which Do not Vary Significantly with Training Status for the Male Sample

Marital status and number of dependents at the time of training. Marital status and number of dependents do not appear to influence training status significantly. A chi square test on Table D-18, with five degrees of freedom yielded $X^2 = 8.42$ which is not significant at the .10 level.[1] Although the groups of workers who withdrew from employment and who refused retraining without employment had a smaller proportion of single men than did the other groups,[2] this difference was not statistically significant because of the small numbers involved.

With respect to number of dependents for the men in the sample, the two groups again had somewhat higher mean values than did the other groups, but the chi square for the number of dependents divided into two groups was 6.42 with five degrees of freedom.[3] This was not statistically significant at the .10 level.

Labor force participation in the twelve-month period preceding the beginning of training. The labor force participation of the workers in the twelve months before training is not a significant factor in the determination of training status. The sample was divided into those who had been in the labor force during the entire year preceding training and those who had not been in the labor force during the entire period.

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[1] This was computed on the basis of single or other marital status.

[2] This would be expected since these groups were older than the others.

[3] The two groups were one dependent and more than one dependent.

TABLE D-18 -- Distribution of the Male Sample by Marital Status at the Time of Training and Training Status (in percentages)

Marital Status	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Single	54.4	52.8	36.8	66.7	61.8	37.9	168	54.0
Married with Wife	42.8	38.9	57.9	29.6	36.4	55.2	131	42.1
Other	2.8	8.4	5.3	3.7	1.8	6.8	12	3.9
Total	46.6	11.6	6.1	8.7	17.7	9.3	311	100.0
Per cent Single	54.14		54.35		53.57			

TABLE D-19 -- Distribution of the Male Sample by Number of Dependents (Including Self) at the Time of Training and Training Status (in percentages)

Dependents	Utilized Retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
one	53.5	47.2	36.8	59.3	60.0	37.9	161	51.9
two	22.2	22.2	10.5	14.8	14.5	27.6	62	20.0
three	5.6	11.1	5.3	7.4	10.9	00.0	21	7.0
four	7.6	11.1	15.8	11.1	5.5	17.2	29	9.4
five	6.9	2.8	15.8	3.7	5.5	6.9	20	6.4
Over five	4.2	5.6	15.8	3.7	3.6	10.3	17	5.4
Total	46.4	11.6	6.1	8.7	17.8	9.4	310	100.0
Average	2.06	2.17	3.21	1.96	2.00	2.59		2.17
	2.08		2.48		2.20			

The chi square test yielded $X^2 = 6.47$ with five degrees of freedom, which is not significant at the .10 level. As can be seen from the table below, the dropouts had been in the labor force for a longer period, on the average, than the other groups. Also, the workers who utilized the retraining had a higher average time in the labor force than did the workers who did not use it.

Earned income for the twelve-month period preceding the beginning of training. There was some variation among the training status categories in the income earned during the year before the beginning of training. For instance, the difference between average incomes of the two groups who withdrew from retraining was $650.[1] It is also noteworthy that the groups who did not enter the course or who withdrew from the course with jobs had higher prior incomes than did the other groups. These differences, however, are not statistically significant.[2]

Skill level of the experienced labor force. There was no statistically significant difference among the training status categories in terms of their skill levels. When Table D-22 was divided into unskilled, semiskilled, and skilled and other workers,[3] the chi square, with ten

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[1] This is not significant, since the standard error of the differences of the means equals approximately $595.

[2] $X^2 = 10.82$ with ten degrees of freedom. The sample was divided into those earning up to and including $1000, those earning from $1001 to $3000, and those earning over $3000.

[3] Other workers includes basically white collar occupations.

TABLE D-20 --- Distribution of the Male Sample by Time in the Labor Force in the Year Preceding Training and Training Status (in percentages)

Time in Labor Force	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
Less than 1 quarter	11.8	21.8	0.0	4.3	14.3	22.6	35	13.11
1 but less than 2 quarters	11.8	6.2	13.3	4.3	18.4	4.5	30	11.2
2 but less than 4 quarters	11.8	18.7	13.3	8.7	8.2	4.5	30	11.2
4 quarters	64.6	53.1	73.3	82.6	59.2	68.2	173	64.6
Totals	47.4	11.9	5.6	8.6	18.3	8.2	268	100.0
Mean	40.7	35.8	44.1	47.4	36.9	39.3		
	39.7		46.0		37.6			

TABLE D-21 -- Distribution of the Male Sample by Income Earned in the Twelve Months preceding Beginning of Training and Training Status
(in percentages)

Amount in dollars	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
0	14.4	22.2	14.3	21.1	14.9	20.0	40	16.3
1-1000	22.9	18.5	14.3	5.3	12.8	25.0	46	18.8
1001-2000	17.0	11.1	7.1	31.6	17.0	10.0	40	16.3
2001-3000	19.5	14.8	21.4	21.1	12.8	10.0	42	17.2
3001-4000	12.7	22.2	21.4	5.3	25.5	15.0	40	16.3
Over 4000	13.5	11.1	21.4	15.8	17.0	20.0	37	15.1
Totals	48.2	11.0	5.7	7.8	19.2	8.2	245	100.0
Mean ($)	1,986.57	1,985.74	2,573.14	1,923.05	2,410.68	2,198.18		2,113.71
	1,986.41		2,198.85		2,347.24			

TABLE D-22 -- Distribution of the Male Experienced Labor Force by Skill Level and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew for employmnnt	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
							Number	Per Cent
Skilled	37.8	13.5	5.4	5.4	24.3	13.5	37	17.8
Semi-skilled	45.1	14.1	7.0	11.3	11.3	11.3	71	34.3
Unskilled	54.0	11.1	7.9	1.6	12.7	12.7	63	30.3
Other	43.2	5.2	10.8	10.8	18.9	10.8	37	17.8
Total	46.2	11.5	7.6	7.2	15.4	12.0	208	100.0
Per Cent Skilled	30.83		38.70		43.86			

degrees of freedom was 9.54. What little difference there was existed between the workers who refused retraining, who had only 50 per cent of the experienced workers in the unskilled and semi-skilled occupations, and the sample as a whole who had 64.6 per cent in these occupations.

Reason for leaving last full-time job preceding the beginning of training. Whether the workers were laid off or quit their previous jobs was immaterial to their training status.[1] Dividing the sample into those laid off and those who left the job voluntarily or for other reasons, the chi square, with five degrees of freedom, was 5.97. There was a somewhat higher proportion of layoffs among the workers withdrawing without employment and among the workers who refused retraining for employment, a larger proportion voluntarily left their previous jobs, compared with the other groups.

Variation of characteristics of the female sample by training status. The relationship between characteristics and training status were much less pronounced for the women than for the men. One probable reason was that many women who might have taken the course if it had been continued to be offered were placed in the "did not report" category because the course was terminated. Of this group, 55 per cent gave as their reason for not entering the course that they had not been called because the course was terminated. Also, the small number of observations

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[1] "Voluntarily quit" includes the following reasons: to get a better job, didn't like the work, disagreement with management, personal reasons, military service, and illness -- while involuntary layoff includes: seasonal layoff, temporary business cut-back, and business closed permanently.

TABLE D-23 -- Distribution of the Male Sample by Reason for Leaving Last Full Time Job Preceding the Beginning of Training and Training Status

	Utilized retraining	Completed but did not utilize	Withdrew for employment	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
Voluntarily Quit	28.5	39.0	38.5	17.7	56.0	30.8	59	33.7
Involuntary Layoff	50.0	56.7	43.2	60.6	40.0	38.5	87	49.7
Other	21.4	4.3	15.4	11.8	4.0	30.8	29	16.6
Totals	48.0	13.1	7.4	9.7	14.3	7.4	175	100.0
Voluntarily Quit	36.4	40.9	45.4	20.0	60.9	44.4	59	40.4
Involuntary Layoff	63.6	59.1	54.6	80.0	39.1	55.6	87	59.6
Totals	45.2	15.1	7.5	10.3	15.8	6.2	146	100.0
Per Cent Voluntarily Quit	37.50		30.77		56.25			

in the female sample made it necessary to limit the chi square test to a few cells.[1] Therefore, the training status groups were divided among the women who entered the course, the women who did not report to the course and had a job by the beginning of training, and the women who did not report and did not have a job at the time the course began. This gives two degrees of freedom.

Number of weeks of continuous unemployment prior to the beginning of the training course. This was the only variable where a significant value of chi square was found -- $X^2 = 7.74$. The sample was divided into those with some unemployment prior to retraining and those with none. As would be expected in view of the definition of the category, a high proportion of the women who refused retraining for employment had jobs. There was also, however, a major difference between the women who completed the course and those who did not enter and did not have jobs. Only 35 per cent of the former group were employed or not in the labor force at the time of the retraining whereas of the latter group 67 per cent were not unemployed. Thus, it appears that those who had actually been seeking employment in the past and had not found jobs were more likely to complete the course than were women who had not been unemployed prior to training.

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[1] It was even impossible in some cases to perform any chi square test because of the small theoretical cell frequencies.

TABLE D-24 -- Distribution of the Female Sample by Number of Weeks of Continuous Unemployment Prior to the Beginning of Training and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
None	28.6	38.5	100.0	83.3	66.7	35	60.3
1 - 12	42.9	7.7	00.0	8.3	16.6	9	15.5
13 and over	28.6	53.9	00.0	8.3	16.6	14	24.1
Totals	12.1	22.4	3.4	20.7	41.4	58	100.0
Average	17.14	14.08	0.00	5.33	6.12		8.86

Age and education. Age and education did not appear to be significant in determining training status. The value of chi square for age was .25 when the women were divided into under and over forty years of age, and 4.50 for education when divided into less and more than eleven years of schooling. Neither of these is significant at the .10 level. This may be attributable to the termination of the course or to the manner in which the sample was divided (both of these factors were significant for the men). In regard to the latter point, 22 per cent of those who entered the course were under 25, whereas only 13 per cent of those who did not report were as young. Similarly, for the women 45 and over, the percentages were 22 per cent for the retrainees and 34 per cent for the non-retrainees. With respect to the education factor, 44 per cent of the entrants had completed high school, but only 34 per cent of those who did not report had done so. Unfortunately, the sample is not large enough for these differences of for the differences in the means to be statistically significant.

Employment status at the time of the test and during the twelve months preceding the course. Table D-27 gives the distribution of the sample by employment status at the time of the aptitude test; Table D-28 shows the time spent in the labor force in the year before the test; Table D-29 indicated the weeks of unemployment during that period. None of the chi squares -- 1.37, 2.54, and .68 respectively for these three

TABLE D-25 -- Distribution of the Female Sample by Age and Training Status
(in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
14-19	0.0	7.1	0.0	8.3	3.8	3	4.9
20-24	14.3	14.3	50.0	8.3	7.7	7	11.5
25-29	0.0	7.1	0.0	0.0	3.8	2	3.3
30-34	0.0	7.1	0.0	25.0	15.4	8	13.9
35-39	14.3	14.3	0.0	8.3	19.2	9	14.8
40-44	28.6	35.7	50.0	33.3	0.0	12	19.7
45-49	42.9	7.1	0.0	16.7	34.6	15	24.6
50-54	0.0	7.1	0.0	0.0	7.7	3	4.9
55-59	0.0	0.0	0.0	0.0	7.7	2	3.3
Totals	11.5	23.0	3.3	19.7	42.6	61	100.0
Mean Age	40.43	36.29	33.00	35.67	39.81		38.03
	37.67			38.50			

TABLE D-26 -- Distribution of Women by Years of Education Completed and Training Status
(in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
8 or less	14.3	21.4	0.0	0.0	23.0	10	16.4
9 - 10	42.9	35.7	0.0	33.3	46.2	24	39.3
11	00.0	00.0	50.0	16.7	3.8	4	6.6
12 and over	42.9	42.9	50.0	50.0	7.6	23	37.7
Totals	11.5	23.0	3.3	19.7	42.6	61	100.0
Average	10.14	10.29	11.50	11.00	10.12		
	10.24			10.40			

TABLE D-27 -- Distribution of Female Sample by Employment Status at Time of Test[a] and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
Unemployed	42.9	64.3	0.0	50.0	40.0	28	46.7
Employed	0.0	0.0	0.0	25.0	0.0	3	5.0
Not in Labor Force	57.1	35.7	100.0	25.0	60.0	29	48.3
Totals	11.7	23.3	3.3	20.0	41.7	60	100.0
Per Cent in Labor Force	57.17			51.35			

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a. In the case of students taking the test while still in high school the date considered is June 30.

TABLE D-28 -- Distribution of Female Sample by Time in the Labor Force During the Twelve-Month Period Preceding Training and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
Less than 1	57.2	35.7	100.0	33.4	60.0	30	50.0
1 - 2	14.3	14.3	0.0	16.7	4.0	6	10.0
2 - 4	14.3	14.3	0.0	8.3	12.0	7	11.7
4	14.3	35.7	0.0	41.7	24.0	17	28.3
Totals	11.7	23.3	3.3	20.0	41.7	60	100.0
Mean	16.6	25.6	0.0	30.3	19.8		
	22.60			23.20			

TABLE D-29 -- Distribution of Female Sample by Number of Weeks Unemployed in the Twelve Months Preceding the Beginning of Training and Training Status

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
None	28.6	38.5	100.0	36.4	50.0	25	43.9
1 - 12	42.9	7.7	0.0	18.2	16.7	10	17.5
12 - 25	14.3	38.5	0.0	9.1	12.5	10	17.5
26 and over	14.3	15.4	0.0	36.4	20.9	12	21.1
Totals	12.3	22.8	3.5	19.3	42.1	57	100.0
Average	13.14	13.92	0.0	16.82	12.17		13.16
	13.65			13.63			

variables -- are significant at the .10 level.[1] Although not statistically significant, there were some important differences between those who completed the course and those who did not report without employment: 57 per cent of the former group were in the labor force at the time of the test, whereas only 40 per cent of the latter group were in the labor force. Similarly, 58 per cent of those who completed the course had been in the labor force for more than one quarter in the twelve months preceding training, but only 40 per cent of the women who refused had. Finally, although 45 per cent of those who completed the course had been unemployed for one quarter or more of the four quarters preceding the start of training, only 33 per cent of the other group had been unemployed that long.

There was also a difference between the women who completed the retraining. Those who used the course had a considerably lower labor force participation rate: 57 per cent were not in the labor force at the time of the test, and their mean number of weeks in the labor force was 16.6. The figures for the women who did not use the course were 36 per cent and 25.6 weeks.

Finally, it should be noted that the women who refused retraining for employment had a higher proportion in the labor force at the time of the test (75 per cent), had spent more time in the labor force in the twelve months preceding the start of training (30.3 weeks), and had a longer average unemployment during that period (16.82 weeks) than any of the other groups.

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[1] Table D-27 was divided into those in the labor force and those not in it; Table D-28 into those with less than one quarter in the labor force and those with more than one quarter, and Table D-29 into those with no unemployment and those with some unemployment. The distribution of those who worked the entire year can be found by subtracting the first row of Table D-29 from the bottom row of Table D-28.

Income earned during the twelve month period preceding the beginning of training. With respect to income earned during the year before training, again there was no significant variation by training status. The sample was divided into those earning some income and those earning none. Chi square was 2.73.

TABLE D-30 -- Distribution of Female Sample by Income Earned in the Twelve Months Preceding the Beginning of Training and Training Status (in percentages)

$ Earned	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total Number	Total Per Cent
0	66.7	57.1	100.0	36.4	65.2	32	58.2
1 - 1000	33.3	28.6	0.0	27.3	26.1	15	27.2
1000 - 2000	0.0	14.3	0.0	36.4	8.7	8	14.6
Totals	10.9	25.4	1.8	20.0	41.8	55	100.0
Average	179.58	403.79	0.00	570.06	262.53		346.17
	336.56			362.03			

Number of weeks between the test and the end of training. Finally the number of weeks from the test to the end of the course did not vary significantly with training status. When the sample was divided into less than nine weeks and nine or more weeks from the test to the end of training, the chi square was 3.63. There was, however, a significant difference between the average time period for the two groups who completed the course. The workers who did not use the retraining had a significantly lower mean at the .05 level.[1] The differences among the other groups were not appreciable.

Unfortunately, the other characteristics could not be tested by means of the chi square test because they would not generate large enough theoretical cell sizes. Some observations on these variables, which are not statistically significant, follow:

Marital status and others in family unit working. The women who enrolled in the course seemed to include a higher percentage of primary wage earners than those who did not attend. Of the women who entered the course, 39 per cent were either not married or not living with their husbands, but only 10.5 per cent of the women not entering the course were not married and living with their husbands. Also, 41 per cent of those who entered the course did not have others in the family unit working during the retraining

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[1] Their standard error of the difference of the means is .85.

TABLE D-31 -- Distribution of Female Sample by Number of Weeks between the Test and the End of the Training Class to Which the Worker was or would have been Assigned and Training Status. (in percentages)

Number of Weeks	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
Less than 7	0.0	7.1	50.0	0.0	11.5	5	8.2
7 - 8	14.3	64.3	50.0	41.7	57.7	31	50.8
9 - 10	57.1	28.6	0.0	41.7	23.1	19	31.1
Over 10	28.6	0.0	0.0	16.7	7.7	6	9.9
Totals	11.5	23.0	3.3	19.7	42.6	61	100.0
Averages	10.29	7.79	6.00	9.08	8.15		8.43
	8.62			8.44			

period, whereas only 23.5 per cent of the non-entrants did not have other family members at work.

Unemployment benefits received during the twelve-month period preceding the beginning of retraining. There was considerable variation in the amounts which the groups received. The women who used the retraining had received $280 less on the average than the women who completed the retraining but did not use it, and about $150 less than the sample as a whole. This is probably explained by their lower labor force participation rate during the period.

Amount of governmental aid eligible to receive during training.

Only six of the women were not eligible to receive an A.R.A. allowance of $37.00. These women lived in Shelton, Connecticut, outside of the boundaries of the Ansonia labor market which had been set by the U.S. Department of Labor. None of the women entered the course, but the lack of benefits was the reason in only one case. Three of the women were not called because the program had been ended. One was not interested in the course, and one had a transportation problem.[1]

Prior Training. Only 15.5 per cent of the women had had institutional training of three months or more prior to the course. These women were more likely to enter the course than those without prior training. Of the women who entered, 27 per cent had had training, whereas only 8.5 per cent of the women who were not in the course had had such training.

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[1] The lack of training allowance might have kept other women from Shelton from applying for the course.

TABLE D-32 -- Distribution of Women in the Sample by Marital Status and Training Status
(in percentages)

Marital Status	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
Single	14.3	21.4	0.0	0.0	7.7	6	9.8
Married and Living with Husband	85.7	50.0	50.0	100.0	84.6	48	78.7
Other	0.0	28.6	50.0	0.0	7.7	7	11.5
Totals	11.5	23.0	3.3	19.7	42.6	61	100.0

TABLE D-33 -- Distribution of Women in the Sample by Other Members of Family Unit Working at Time of the Retraining Course and Training Status (in percentages)

	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
Others worked	66.7	57.1	50.0	90.9	69.6	39	69.6
Others did not work	16.7	7.1	0.0	9.1	21.7	8	14.3
No others in unit	16.7	35.7	50.0	0.0	8.7	9	16.1
Totals	10.7	25.0	3.6	19.6	41.1	56	100.0

TABLE D-34 -- Distribution of Female Sample by Unemployeemnt Benefits Received in the Twelve-Month Period Preceding the Beginning of Training and Training Status (in percentages)

$ Received	Utilized retraining	Completed but did not utilize	Withdrew without employment	Refused retraining for employment	Refused retraining without employment	Total	
						Number	Per Cent
0	71.4	46.2	50.0	80.0	73.9	37	67.3
1 - 500	28.6	38.5	50.0	0.0	8.6	10	18.2
500 - 1000	0.0	0.0	0.0	10.0	13.0	4	7.3
1000 - 2000	0.0	15.4	0.0	10.0	4.3	4	7.3
Totals	12.7	23.6	3.6	18.1	41.8	55	100.0
Average $	$53.14	$334.69	$60.00	$227.20	$173.52		$201.93
	$236.15			$189.79			

APPENDIX E -- The Regression Models

Many factors were found to be correlated with the training status of the men in the sample. Therefore, simple comparisons of average wage incomes, unemployment, and government unemployment benefits received according to training status could not be computed to indicate the effects of retraining adequately. The influence of the characteristic differences among the different groups of workers would be included along with the actual effects of retraining. Multiple regression techniques with the use of binary variables, however, permit the variables which are correlated with retraining to be taken into account, so that the effects of retraining can be isolated. Such techniques were therefore used in this study.[1]

Not every observation included complete information on every variable. Consequently, four subsamples of the total male sample were used. The regression models employed the subsample that contained the greatest number of observations which did include complete information on each variable. Following is a list of the dependent and independent variables used in each of the regression models.

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[1] The necessity of such techniques can be illustrated by comparing the results achieved when simple averages were used and when multiple regressions were used. The average computed weekly income differential between the workers who used the retraining and the workers who refused retraining without employment was $18.14 when the means of each group were compared, but only $8.83 when ten independent variables were taken into account.

Regression Model One -- 285 Observations

Dependent Variables:

Computed average weekly income from the end of retraining to the date of interview

Unemployment as a percentage of the time in the labor force from the end of retraining to the date of interview

Unemployment benefits received from the end of retraining to the date of interview

Independent Variables:

Area

Subject matter of course

Training status

Age -- Less than 20 years, 20-24 years, 25-34 years, and over 34 years

Marital status -- single or not single

Number of dependents including self -- Less than 3 dependents and 3 or more dependents

Education -- Less than 10 years, 10 or 11 years, and 12 or more years

Number of weeks from the end of retraining to the interview -- less than 60 weeks, 60-70 weeks, and more than 70 weeks

Regression Model Two -- 234 Observations[1]

Dependent Variables:

Quarterly wages for the four quarters from the second quarter of 1962 through the first quarter of 1963 (as reported to the Connecticut State Labor Department, Unemployment Insurance Division).

Independent Variables:

All independent variables included in Regression Model One.

Regression Model Three -- 169 Observations

Dependent Variables:

All dependent variables included in Regression Models One and Two.

Independent Variables

All independent variables included in regression Models One and Two.

Number of non-military moves from 1951 to 1961 -- No moves, 1 or 2 moves, 3 or more moves.

Connecticut State Employment Service labor force classification in August 1962 -- entrant or non-entrant

Race -- white or non-white

Training of three months or more prior to retraining

---

[1] The sample was reduced in size because complete wage records were not available for all of the workers included in Regression Model One. Also, if the worker had left the labor force for an extended period because of a service commitment or in order to return to school, his record was not used in this Model.

Unemployment status at the time of the aptitude test -- unemployed, or employed or not in the labor force.

Unemployment for the 12 months preceding the beginning of retraining -- less than 5 weeks, more than 5 weeks but less than 6 months, and 6 months or more.

Government unemployment benefits received during the 12 months preceding the beginning of retraining -- none, $1 - $500, and over $500.

Income earned during the 12 months preceding the beginning of retraining -- less than $1000, $1000 - $3000, and more than $3000.

Labor force participation during the 12 months preceding the beginning of retraining -- four quarters or less than four quarters

Regression Model Four -- 169 Observations[1]

Dependent Variables:

All dependent variables included in Regression Models One and Two.

Independent Variables:

All independent variables included in Regression Models One and Two.

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[1] This regrssion model was constructed to allow a comparison to be made to determine how much of the change in the coefficients of regression between the first two regression models and the third regression model was due to the addition of the new independent variables, and how much of the difference was due to the change in the size of the sample.

RETRAINING AND RELOCATION RESEARCH PROJECT

We are trying to learn how much use the government retraining courses have been to unemployed people. I believe you entered or applied for a retraining course not long ago. We would like to learn quite a few things about people who have been helped by the courses and people who have not, in order to find out how the programs can be made to do what's needed. We are not going to tell anybody your name or how you answered our questions, because this is just a statistical study, a kind of census.

To begin I would like to make sure I have your name spelled right and the correct address. (Spell name and check address.)

1. Name ______________________________

2. Address ______________________________

(BY OBSERVATION ONLY)

3. Race W-0 N-5 Other

4. Sex M-0 F-5

Now if I understand it correctly, you enrolled or applied to enroll in a government retraining course about a year ago.

5. What was the subject of that retraining course? What was it to train people to do?

   Shipfitter-0 Pipefitter-1 Machine Shop Operator-2
   Sewing Machine Operator-3 Welder-4 Other (What?) ______

6. When did the course begin? Month ____________ Year ______

7. When did you take the aptitude test? Month ______ Year ______

8. Some of the people who applied for the course never attended any of the classes. Were you one of these people?

N	Y
Did you complete the course?	Were you accepted for training?
1. Completed 2. Dropped out	3. N - Rejected 4. Y - But you did not report to the class. Is that correct? (Did Not Report)

(IF REJECTED ASK QUESTIONS 9 - 11, OTHERWISE SKIP THEM)

9. Did you feel you could have learned that type of work? Y N
   Comment ______________________________

10. How did they explain why you were not accepted for the course? What reasons did they give you? ______________
    ____

11. How do you feel about not being accepted? ______________
    ____

(IF DID NOT REPORT ASK QUESTION 12, OTHERWISE SKIP IT)

12. Why did you not go to the class?

1. Got Job 2. Health reasons 3. Couldn't afford the expense 4. Family, friends dissaproved 5. Couldn't learn the material Other (what) ____________________

(IF DROPPED OUT OF COURSE ASK QUESTIONS 13-15, OTHERWISE SKIP THEM)

13. How long were you in the course? ______ weeks
14. Did you miss any classes before you stopped going? N Y
About how many class sessions did you miss? __________
15. Why did you not complete the course?

0-Got job 1-Health reasons 2-Couldn't afford the expense
3-Family, friends disapproved 4-Didn't like the instruction
5-Didn't like the course material 6-Work was too hard
7-Too many absences 8-Suspended Other (Please explain)
____

(IF DROPPED OUT OR COMPLETED ASK QUESTIONS 16-20, OTHERWISE SKIP THEM)
16. Why did you take the training course? ____________________
____
17. Do you think the training was useful to you? Y N DK
Comment ____
18. How hard or easy did you find the course? Easy Hard
Just about right
19. Does it now seem as if the course covered too many skills, not enough skills, or was it just about right?
Too many ____ Not enough ____ Just about right ____
Comment ____
20. How well did you like the course? Very much ____ Pretty well, OK etc. _____ Don't know, so so, etc. _____ Not much _____ Not at all _____

Now I would like to ask you a few questions about yourself.

21. How old were you at your last birthday? ______ years old

1-under 20 2-20 to 24 3-25 to 34 4-35 to 44 5-45 to 54
6-55 to 64 7-65 and over

22. Where were you born? ____________________________________
City State Country

23. What year was that? (What year were you born in) _________

24. Are you 1-single 2-married 3-widowed 4-separated 5-divorced

25. Do you have any children living here with you? N Y
How many boys and how many girls? Beginning with the oldest:
How old is he? Is he single, married, etc.? Is he still in school? Did you pay more than half of his expenses last year? Does he live here at home with you now? (IF N) Where is he? (REPEAT FOR EACH CHILD)

Relationship	Age	Marital Status	In School?	Support?	Away?	Where
			Y N	Y N	Y N	
			Y N	Y N	Y N	
			Y N	Y N	Y N	
			Y N	Y N	Y N	
			Y N	Y N	Y N	

26. Is there anyone else for whom you paid more than half of their expenses last year? For instance, your parents, children not living at home or some relative. N
Y - Who was it? What is his relationship to you? How old is he? Does he live here in this house with you? (REPEAT FOR EACH DEPENDENT)

Relationship	Age	Live Here
		Y N
		Y N
		Y N

27. How long have you lived right around here? ____________
Why did you move here? ______________________________
(GET FOLLOWING INFORMATION BACK TO 1950)

Where were you living before you moved (t)here	Since what year had you been living (t)here?	Why did you move (t)here?

28. a. Do you live in a trailer? Y N

b. Where you are now living do you 1-Own 2-Rent 3-Live with your parents 4-Other (Explain) ____________________
(OWN) Do you own it out right ______ or are you still making payments on it? ______

(RENT) About how much a month is your rent? $______ a month

29. What is the highest grade in school you completed? ________
1-under 8 2-8 or 9 3-10 or 11 4-12 5-College no degree
(IF 12 OR MORE) Did you receive a high school diploma? Y N
(IF 16 OR MORE) Do you have a college degree? N Y -- What?
____________ 6-Bachelor's degree 7-Graduate work

30. Since you left school, have you had any specialized training that lasted three months or longer? For example, have you had any courses in a trade or vocational school, or a business, technical or Armed Forces school? (Other than specific job related training and the government retraining course) N-5
Y-0

	most recent	2nd most recent
What was the topic of the course?		
From when to when did you take the course?	______ to ______	______ to ______
Who sponsored the course? (e.g. Army, YMCA, Board of Education)		
How many hours a week was the course?	______	
Why did you take the training? a) to get a new job? b) to help you in the job you had? c) to prepare for a change or promotion? d) Other (What)	______	

31. Do you have any physical handicaps or health problems which prevent you from doing certain types of work? N-5
Y-0 What are they? ____________________

32. Do you have relatives here in this area living in a different house than you? N
Y -- Who? Mother Father Son Daughter Brother Sister ________

33. Now I would like to ask you about the kinds or organizations you may take part in. Do you either belong to or go to the meetings of: 1. a union 2. a lodge 3. a sports team or hobby club (What sport or hobby? ____________) 4. a P.T.A. 5. a political club or organization 6. Volunteer firemen 7. a church 8. a club or class in a church 9. some other organization (What? ______________)

We would like to get your ideas on ways in which the Retraining Program could be improved. What are your suggestions, if any, with regard to the following:

34. Letting prople know about the retraining course. ____________

35. Selection of trainees. ____________

36. What is taught. ____________

37. Length of the course. ____________

38. Quality of the instruction. ____________

39. Quality of the equipment. ____________

40. Help in getting a job after training. ____________

41. Anything else about the program. ____________

42. (FOR DNR) If you took the course would you have received any of the following kinds of payments during training
N Y

(FOR DROP OUTS AND THOSE WHO COMPLETED) Did you receive any of the following kinds of payments during training
N Y

IF Y -- How much did you receive a week? How many weeks did you receive it?

Travel allowance to and from class Y-1 $ ____wk. for ____ wks.

ARA retraining subsistence payment Y-2 $ ____wk. for ____wks.

Unemployment Compensation Y-3 $_____wk. for_____wks.

Aid to Dependent Children Y-4 $_____wk. for_____wks.

Relief Y-5 $_____wk. for_____wks.

Free transportation to and from class Y-6 $_____wk. for_____wks.

Other government payment (What?) _______ $_____wk. for_____wks.

43. Did you feel that this was a satisfactory amount? Comment ________

Now we would like to find out what you have been doing since you took the aptitude test.

44. (IF DROP OUT) When did you drop out of the course? ________ ______
month year

(IF COMPLETED) When did you graduate from the course? ______ ____
month year

What did you do right after (the aptitude test, you dropped out, or graduated, WHICHEVER APPLIES) Were you unemployed for a while, employed right away, or not working and not looking for work?

E mployed (Go to Question 46)

UN employed (Go to Question 45)

ULF Not working and not looking for work (Go to Question 50)

45. a. How long were you without work?
  b. Did you receive funds from any of these sources at any time during this period? (CARD I)
    Y - How much was it a week? How many weeks did you receive?
    N - Do you know why you didn't receive it?
  c. Did you receive food or money in any of these ways during this period? (CARD II) How much did you receive a week? For how many weeks did you receive it?
  d. Was a job offered you during this period which you did not take? Y - What was the reason you did not take it?
  e. Did you look for work in any other cities than this one during this period? Y - What cities?
  f. Did you work at all during this period, even just a few hours a week?
    Y - On the average how many hours a week did you work? On the average how much did you make an hour?

g. When did this period of unemployment end?

h. Then what did you do? Were you EMPLOYED (Go to Question 46) UNEMPLOYED FOR A WHILE (Go to Question 46) or NOT WORKING AND NOT LOOKING FOR WORK (Go to Question 50).

46. What kind of business or industry or establishment did you work in?

a. What kind of work were you doing? What exactly did you do in your job?
b. How many hours a week did you work at that job on the average?
c. How much an hour before deductions did you make when you started working at _______?
d. Did you receive any raises or cuts in salary while you were working there? Y - When? What was your new wage rate per hour?
e. Did your employer pay for all or part of any of these fringe benefits? 1)pension plan 2)hospitalization plan 3)life insurance 4)any other benefits (specify)
f. Did you ever work more than ____ hours a week at that job? For how many weeks did you work fewer hours? How many hours a week did you work? Did you receive any extra pay for the overtime? Y - How much extra?
g. Did you ever work less than _____ hours a week at that job? For how many weeks did you work fewer hours? How many hours a week did you work? Did you receive less than your regular hourly rate? Y - How much less? Why did you work less than ______ hours a week?
h. Did you not work at all some weeks and then return to work there? I mean were you laid off at all while you were working there? (Temporary layoff with worker reinstated.) Y-Why were you laid off? From when to when were you not working? (GO TO QUESTION 45)

a. ________________	a. ________________	a. ________________
b. source ________ $______ week ________wks.	b. source _________ $_______week ___________ wks.	b. source _________ $________week ___________wks.
c. ________________	c. ________________	c. ________________
c. source ________ $________week ___________wks. Y N	c. source _________ $_______week ___________wks. Y N	c. source _________ $_______week ___________wks. Y N

d. Y N	d. Y N	d. Y N
______	______	______
e. Y-0 N-5	e. Y-0 N-5	e. Y-0 N-5
______	______	______
f. Y N	f. Y N	f. Y N
____hrs./wk.	____hrs./wk.	____hrs./wk.
$____hr.	$____hr.	$____hr.
g. ______	g. ______	g. ______
month day year	month day year	month day year
h. E UN NLF	E UN NLF	E UN NLF
______	______	______
a.______	a.______	a.______
b.____hrs/wk.	b. ____hrs./wk.	b. ____hrs./wk.
c.$____/hr.	c. $____/hr.	c. $____/hr.
d.______	d. ______	d. ______
month day year	month day year	month day year
$____/hr.	$____/hr.	$____/hr.
e. 1 2 3	e. 1 2 3	e. 1 2 3
4______	4______	4______
f. Y N	f. Y N	f. Y N
____wks.	____wks.	____wks.
____hrs./wk.	____hrs./wk.	____hrs./wk.
Y N	Y N	Y N
______	______	______
g. Y N	g. Y N	g. Y N
____wks	____wks.	____wks.
____hrs./wk.	____hrs./wk.	____hrs./wk.
Y N	Y N	Y N
______	______	______
______	______	______
h. Y N	h. Y N	h. Y N
Reason____	Reason____	Reason____
______	______	______
____to____	____to____	____to____

46. i. After you started working there did you receive any further training of any of these types? (CARD IV)
Y - Which of these types of training did the job involve How long did the training last? What did the training consist of? Did the training cost you anything?

47. While working on this job, did you hold any second job, even one that took only a few hours a week?
Y - Did you make use of any of the things you learned in the training course? What?
    a. How many hours did you work in an average week?
    b. From when to when did you hold this second job?
    c. How much did you make in an average hour?

48. At any time while you were working on your main job (as a _______) did you receive food or money from any of these sources (CARD I) How much did you receive a week? For how many weeks did you receive it? Why did you receive it?

49. Are you still working at _______ (main job)? (IF Y, GO TO QUESTION 51)
N - When did you leave it? Why did you leave it? (CARD III)

What did you do immediately after you left there? Were you EMPLOYED (Go back to question 46) UNEMPLOYED (Go back to question 45) or NOT WORKING AND NOT LOOKING FOR WORK (Go to question 50).

50. What was the reason you were not looking for work during that period?

At any time during this period did you work for brief periods, part time perhaps, even for just a few hours a week?
Y -- Did you make use of any of the skills taught in the training course? What skills?
    a. How many hours did you work in an average week?
    b. From when to when did you hold this job?
    c. How much did you make in an average hour?

Did you receive food or money from any of these sources during this period? (CARD I)
How much did you receive a week?
For how many weeks did you receive it?
Why did you receive it?
When did you start looking for work again?
After this period of not working and not looking for work, were you unemployed for a while (GO TO QUESTION 45) or did you find work immediately? (GO TO QUESTION 46)

46.	I. Y N	I. Y N	I. Y N
	Type ________	Type________	Type ________
	________wks.	________wks.	________wks.
	________	________	________
	Y N	Y N	Y N
47.	Y N	Y N	Y N
	Y N	Y N	Y N
	________	________	________
	a. ______hrs./wk.	a. _____hrs./wk.	a. ______hrs./wk.
	b. _______to________	b. ______to_____	b. _______to_______
	c. $________/hr.	c. $_______/hr.	c. $_________/hr.
48.	Source________	Source________	Source________
	$____________/wk.	$________/wk.	$____________/wk.
	____________wks.	________wks.	____________wks.
	________	________	________
49.	Y N	Y N	Y N
	________	________	________
	________	________	________
	E UN NLF	E UN NLF	E UN NLF
50.	________	________	________
	Y N	Y N	Y N
	Y N	Y N	Y N
	________	________	________
	a. __________/hrs.wk.	a. _______hrs./wk.	a. _________hrs/wk.
	b. _________to________	b. ______to________	b. ______to ________
	c. $____________/hr.	c. $__________/hr.	c. $___________/hr.
	Y N	Y N	Y N
	Source________	Source________	Source________
	$__________/wk.	$____________/wk.	$____________/wk.
	__________wks.	____________wks.	____________wks.
	________	________	________
	__________196___	__________196____	__________196___
	E UN NLF	E UN NLF	E UN NLF

51. (IF DROP OUT OR COMPLETED) Since leaving retraining, have you had a job using the skills for which you were trained in the course?

Y-0	N-5
What skills have you used?	Have you been offered a job using These skills? Y
________________	N -- Why not? ________________
Did you get the job as a result of the course? N	

Y - In what ways is it a result? ________________________

Did you know that you would get the job when you started the course? Y N

52. Since you took (the aptitude test, or left the training course, WHICHEVER APPLIES) have you looked for work in any cities other than this one? Y--0 N-5
Y -- What cities? ______________________________
N -- What was the reason you didn't look elsewhere? __________
Whre you offered a job in any other cities than this one?
Y N Y---Why didn't you take it?____________________

53. Have any of the other members of your family worked at any time since January 1961? N
Y -- Who? From when to when did .....work? Did ......stop working or work fewer hours at any time? When? Why did ....stop (or reduce ......hours)?
a. (IF Y) Did ......receive food or money from any of these sources while ......was not working? For how many weeks? How much a week did ....receive? (CARD I)
b. How much did ......make in an average week, before deductions?

Relationship	Dates Worked	Stopped Work	Reduced Hours	When	Why
___________	From________ To__________	Y-0 N-5	Y-0 N-5	From___ To_____	___________
___________	From________ To__________	Y-0 N-5	Y-0 N-5	From___ To_____	___________
___________	From________ To__________	Y-0 N-5	Y-0 N-5	From___ To_____	___________

Relationship	Source	Weeks	Amount	Pay
___________			$	$
___________			$	$
___________			$	$

54. Do you expect to be living in the same community five years from now? Y
N - Why not? ____

55. A lot of things enter into where one would most like to live. If you had a free choice would you prefer to go on living here, or move somewhere else, or doesn't it make much difference?
Live here____ No difference ____ Somewhere else ____
Where?____________________

56. Now let's do some supposing. Suppose right now you were offered a job as a (regular occupation) in some city two or three hundred miles away from here, do you think you would take it?
Y - What disadvantages would there be in taking it? ____________
____
N - Why wouldn't you be interested in it? ________________
If the costs of moving you and your family were paid, would you take it? Y N

57. Do you think young people should stay around here when they finish school? Y Qualified Y Ambiguous Qualified N N

58. What about some of your neighbors of your own age who have no jobs? Is it better for them to stay here _____or move away ____?

Now I would like to find out a little about what you did before the (aptitude test or beginning of course, WHICHEVER APPLIES).

(GO BACK TO JANUARY, 1960)

59. When you took the (aptitude test or started the training course, WHICHEVER APPLIES) were you Employed, Unemployed, or Not Working and Not Looking for Work?

E mployed (GO TO QUESTION 61)

UN employed (GO TO QUESTION 60)

NLF Not working and not looking for work (GO TO QUESTION 62)

60. a. When did this period of unemployment begin?

b. When did this period end?

c. Did you receive funds from any of these sources at any time during this period? (CARD I)
N - Why not?
Y - For how many weeks did you receive it?
How much a week did you receive?

d. Did you receive food or money in any of these ways during this period? (CARD II)
For how many weeks?
How much did you receive a week?

e. How many weeks were you without work?

f. During this period of unemployment, did you look for work in any other cities than the one you lived in?
N - What was the reason you didn't look elsewhere?
Y - What cities?

g. During this period were you offered any jobs which you did not take?
Y - Why didn't you take them?
Were any of them in cities other than the one you lived in?
Were any of them in occupations other than your regular occupation?

h. During this period did you look for jobs in other occupations other than the one you usually worked in?
Y - What occupations?
N - What was the reason you didn't look for other occupations?

i. During this period did you hold any job, even one that took only a few hours a week.
Y - On the average, how many hours a week did you work?
How much did you make in an average hour?

j. What were you doing just before the period of unemployment we have been discussing? Were you Employed (GO TO QUESTION 61) or Not Working and Not Looking for Work? (GO TO QUESTION 62)

61. a. What kind of business or industry did you work in?

b. What kind of work were you doing? What exactly did you do in your job?

c. When did you start working there?

d. How many hours did you work there in an average week?

e. How much did you make an hour before deductions, on the average?

60.	a.________________	a.________________	a. ________________
	b.________________	b.________________	b. ________________
	c. source________ ________________ ________wks. $________/wk.	c. source ________ ________________ ________wks. $________/wk.	c. source ________ ________________ ________wks. $________/wk.

	d. source ________	d. source ________	d. source ________
	________wks. $________/wk.	________wks. $________/wk.	________wks. $________/wk.
	e. ________wks.	e.________wks.	e. ________wks.
	f. Y-0 N-5	f. Y-0 N-5	f. Y-0 N-5
	________________ ________________	________________ ________________	________________ ________________
	g. Y N	g. Y N	g. Y N
	________________	________________	________________
	Y-5 N-0 Y-5 N-0	Y-5 N-0 Y-5 N-0	Y-5 N-0 Y-5 N-0
	h. Y-0 N-5	h. Y-0 N-5	h. Y-0 N-5
	________________ ________________	________________ ________________	________________ ________________
	i. Y N	i. Y N	i. Y N
	________hrs./wk. $________/hr.	________hrs./wk. $________/hr.	________hrs./wk. $________/hr.
	j. E UN NLF	j. E UN NLF	j. E UN NLF
61.	a.________________ Nonprofit State Agricultural Y-5 N-0	a. ________________ Nonprofit State Agricultural Y-5 N-0	a.________________ Nonprofit State Agricultural Y-5 N-0
	b.________________ Domestic N-0 Y-5	b.________________ Domestic N-0 Y-5	b.________________ Domestic N-0 Y-5
	c.________196____	c.________196____	c.________196____
	d.________hrs./wk.	d.________hrs./wk.	d.________hrs./wk.
	e. $________/hr.	e. $________/hr.	e. $________/hr.

f. Were you working for yourself or someone else?
(IF SOMEONE ELSE) Did the company have three or more employees?
Did you work under a union contract?
Did you have seniority rights there?

g. Did you work for a commission or for wages?

h. Did you not work at all some weeks and then return to work there? I mean were you laid off at all while you were working on this job? (Temporary layoff and worker was reinstated.)
Y - From when to when were you not working (GO TO QUESTION 60)
Why were you laid off? (CARD III)

i. After you,started working there, did you receive any further training?
Y - Which of these types of training did the job involve? (CARD IV)
How long did the training last?
What did the training consist of?
What was the main reason you took the training?
Was it to a)learn the job you were on b)to keep the job you were on c)to prepare for a new job or promotion or d)some othe reason (specify)

j. While working on this job did you hold any second job, even one that took only a few hours a week?
Y - On the average how many hours a week did you work at it? How much did you make in an average hour?

k. When did you leave the main job?

l. Why did you leave it? (CARD III)

m. What were you doing just before you started working at the main job we have just been discussing? Were you Employed (REPEAT QUESTION 61) Unemployed (GO BACK TO QUESTION 60) or Not working and not looking for work? (GO ON TO QUESTION 62)

62. a. When did this period of not working and not looking for work begin?

b. What was the reason you were not looking for work during this period?

c. At any time during this period did you work for brief periods, part time perhaps, even for just a few hours a week?
Y - How many hours did you work in an average week?
How much did you make an hour on the average?

d. What were you doing just before this period of not working and not looking for work began? Were you employed (GO TO QUESTION 61) or Unemployed (GO TO QUESTION 60).

61.	f. Someone else-0 Self-5 Y-0 N-5 Y-0 N-5 Y-0 N-5	f. Someone else-0 Self-5 Y-0 N-5 Y-0 N-5 Y-0 N-5	f. Someone else-0 Self-5 Y-0 N-5 Y-0 N-5 Y-0 N-5
	g. Wages-0 Commission-5	g. Wages-0 Commission-5	g. Wages-0 Commission-5
	h. Y N _____to_____	h. Y N _____to_____	h. Y N _____to_____
	i. Y N	i. Y N	i. Y N
	Type_____________ _________________ _________________	Type_____________ _________________ _________________	Type_____________ _________________ _________________
	a b c d._______________	a b c d._______________	a b c d._______________
	j. Y N	j. Y N	j. Y N
	_______hrs./wk.	_______hrs./wk.	_______hrs./wk.
	$______/hr.	$______/hr.	$______/hr.
	k._______________	k._______________	k._______________
	l._______________	l._______________	l._______________
	m. E UN NLF	m. E UN NLF	m. E UN NLF
62.	a._______________	a._______________	a._______________
	b._______________	b._______________	b._______________
	c. Y N	c. Y N	c. Y N
	_______hrs./wk. $______/hr.	_______hrs./wk. $______/hr.	_______hrs./wk. $______/hr.
	d. E UN NLF	d. E UN NLF	d. E UN NLF

63. What other types of work have you done? When did you start to work in that occupation? How many years did you do each?

Occupations	Number of years in Occupation	Year Started

64. What other kinds of business, industries, or establishments have you worked in? When did you start working in that industry? How long did you work in each?

Industry	Number of years	Yaar Started

Now to finish the interview I would like to ask you a few more questions about yourself.

65. Do you know of any definite wage increases you will receive during 1963? N
Y - How much will the raise be an hour? $_________

66. Since January, 1960, have you ever lived in housing operated by the city, state or federal government? N-5
Y-0 -- From when to when? __________to__________
How much was your rent each month? $_________/month

67. Now I would like to ask you about your savings. Have you or any members of your family had any savings at any time since you took the aptitude test? By savings I mean money you are not using from day to day, money in the bank, credit unions, and checking accounts and government bonds. N
Y--When did you have the most savings? _____________196___
Approximately how much did you have then?$____________

68. Were you ever in debt during this period? Don't count bills that you pay at the end of the month, or mortgages or other installment payments, unless you were behind in your payments.
N Y--When was this? ___________196_____
How much did you owe, approximately? $__________
(IF WON'T ANSWER ABOVE) Was it ever $200 or more?
Y N

69. Finally I would like you to estimate the total income which was earned by all members of the household combined, when they worked for pay, for the past four years. Be sure to include your earnings. (CARD V) Which number gives the income figure closest to the amount earned by your household in 1961? In 1959? In 1958?

1961________ 1960________ 1959_______ 1958_______

Thank you very much! You have been most helpful.

70. May I ask one further favor? We would like your permission to see your Social Security record in Baltimore, where all records for the whole country are kept. It will be used only for the purposes of this study, and we will tell nobody about your individual record. Will you please sign this authorization form for us? (PLEASE USE BALL-POINT PEN. PLEASE CHECK THE SOCIAL SECURITY CARD TO MAKE SURE THE NUMBER IS CORRECT.)

SOCIAL SECURITY AUTHORIZATION

I,____ hereby authorize the use of data on my Social Security records in connection with the retraining research project under the direction of Professor Gerald Somers and Michael Borus.

Social Security Number ______________________ Date_______________

FORD FOUNDATION RETRAINING PROJECT QUESTIONNAIRE

Please use a pen so that we will be able to read your answers easily.

1. NAME______________________________________
First Middle Initial Last

2. PRESENT ADDRESS______________________________
# Street City State

3. Did you enter the retraining course? (Please circle the correct answer and fill in the questions below it.)

YES

a. When did you enter the course?

____
month day year

b. What did the course teach?

____

c. Did you graduate from the course?
_____Yes _____No

d. When did you leave the course?

____
month day year

NO

a. Why did you decide not to enter the course? (Please check the right answer.)

____1. Got job
____2. Health reasons
____3. Couldn't afford it
____4. Family, friends disapproved
____5. Couldn't learn material
____6. State employment service never called for training
____7. Didn't pass the test
____8. Other (Please explain)

____

PLEASE TURN OVER TO PAGE 2

e. Why did you leave the course? (Please check the right answer for you.)

____0. Got job
____1. Health reasons
____2. Couldn't afford it
____3. Family, friends disapproved
____4. Didn't like the instruction
____5. Didn't like the course work
____6. Work was too hard
____7. Too many absences
____8. Suspended
____9. Graduated from the course
____10. Other (Please explain)

____

f. Did you get a job as a result of the retraining course?
____Yes ____No

g. Since leaving the retraining course have you had a job using the skills for which you were trained in the course?
____Yes - What skills have you used? ______________
____No - Have you been offered a job using these skills?
_____Yes _____No

h. While you were taking the retraining course did you receive unemployment compensation or any other government payments?
____Yes ____No

Please answer the following questions whether or not you took the retraining course.

4. Starting with the first job you had after you took the aptitude test, would you please list all of the jobs you have had up until now. Please include any part-time jobs you have had.

1st Job - Employer ______________________
Type of work you did ______________________
Date you started working there ______________________
month day year
Average number of hours you worked a week ____________
Average amount you made an hour before deductions ________
Date you left there (if not presently working there)
____
month day year
Reason you left there ______________________

2nd Job - Employer ______________________
Type of work you did ______________________
Date you started working there ______________________
month day year
Average number of hours you worked a week ____________
Average amount you made an hour before deductions ________
Date you left there (if not presently working there)
____
month day year
Reason you left there ______________________

3rd Job - Employer ______________________
Type of work you did ______________________
Date you started working there ______________________
month day year
Average number of hours you worked a week ____________
Average amount you made an hour before deductions ________
Date you left there (if not presently working there)
____
month day year
Reason you left there ______________________

4th Job - Employer ______________________

Type of work you did________________________________
Date you started working there ______________________
month day year
Average number of hours you worked a week_______________
Average amount you made an hour before deductions__________
Date you left there (if not presently working there)
____
month day year
Reason you left there_______________________________

5. At any of these jobs were you laid off for a week or more before you went back to work there?
_____No _____Yes - For how many weeks were you laid off? _______weeks

6. At any time since you took the test did you collect:
_____unemployment compensation
_____aid to dependent children
_____any other government payments
How many weeks did you collect all together? _____weeks
How much did you collect a week? $______a week

7. At any time since you took the aptitude test have you not been working and not been looking for work? (For example, periods of illness, school, or military service.)
_____No _____Yes (If Yes, please answer a. and b. below)
a. From when to when did you not work and not look for work
From_________________ to__________________
month day year month day year
b. Why were you not working and not looking for work?
____

8. Were you unemployed when you took the aptitude test for the retraining course?
_____No _____Yes - For how long had you been out of work when you took the aptitude test?
________weeks

9. What was the last full time job you had before you took the aptitude test?
Employer____
Type of work you did_______________________________
Date you started working there _____________________
month day year
Number of hours you worked a week __________________
Average amount you made an hour before deductions_______
Date you left there_________________________________
month day year
Reason you left there_______________________________

10. Finally, a few questions about yourself:
    a. How old were you on your last birthday?________________
    b. Where were you living in each of these years:

	City	State
1958		
1959		
1960		
1961		
1962		
1963		

    c. What is the highest grade in school you have completed?
    ____
    d. In what year were you born?_____________
    e. Are you ____married, ____single, ____separated, ___widowed, or ____divorced?
    f. How many people do you support (including yourself?)______
    g. Do you have any physical handicaps or health problems which prevent you from doing any type of work?
    ___Yes ____No

We would appreciate your permission to see your Social Security records. The information is necessary to the correctness of our study. No mention will be made of your name or record, we only want to get average statistics. Please fill in this authorization.

SOCIAL SECURITY AUTHORIZATION

I, ______________________________, hereby authorize the use of data on my Social Security records in connection with the retraining research project under the direction of Professor Gerald Somers and Michael Borus.

Social Security Number ______________________ Date_________________

Thank you!

BIBLIOGRAPHY

Commerce Clearing House, Inc. Standard Federal Tax Reporter 1964. Vol. VII, Nos. 16-121.

Connecticut Labor Department. Monthly Bulletin. Hartford.

Eckstein, Otto. Water Resource Development. Cambridge: Harvard University Press, 1958.

Federal Reserve Bank of Boston. "Part 1, The New England Experience Retraining the Unemployed," New England Business Review, August 1962, pp. 1-4.

Friedman, Milton. Capitalism and Freedom. Chicago: The University of Chicago Press, 1962

Hamel, Harvey R. "Job Tenure of American Workers, January 1963," Monthly Labor Review. October 1963, Vol. LXXXVI, No. 10, pp. 1145-52.

Jaffee, A. J. and Carleton, R. O. Occupational Mobility in the United States 1930-1960. New York: King's Crown Press, 1954.

Johnson, Lyndon B. Economic Report of the President Together with the Annual Report of the Council of Economic Advisers. Washington: U. S. Government Printing Office, 1964.

Johnston, Dennis F. "Educational Attainment of Workers, March 1962," Monthly Labor Review. May 1963, Vol. LXXXVI, No. 5, pp. 504-15.

Kalish, Carol, et al. "Labor Force and Employment in 1961," Bureau of Labor Statistics, Special Labor Force Report No. 23. Washington: Bureau of Labor Statistics, 1962.

Katz, Arnold. "Educational Attainment of Workers, 1959," Bureau of Labor Statistics, Special Labor Force Report No. 1. Washington: Bureau of Labor Statistics, 1960.

Kennedy, John F., Manpower Report of the President and A Report on Manpower Requirements, Resources, Utilization and Training by the United States Department of Labor. Transmitted to Congress March 1963. Washington: U. S. Government Printing Office, 1963.

Krutilla, J. V. and Eckstein, Otto. Multiple Purpose River Development. Baltimore: The Johns Hopkins University Press, 1958.

Mills, Frederick C. *Statistical Methods*. Third Edition, New York: Henry Holt and Company, 1955.

Reynolds, Lloyd G. *The Structure of Labor Markets*. New York: Harper and Brothers, 1951.

Schiffman, Jacob. "Marital and Family Characteristics of Workers, March 1962." *Monthly Labor Review*. January 1963, Vol. LXXXVI, No. 1, pp. 24-36.

U. S. Bureau of Employment Security. *Area Labor Market Trends*. August 1963. Washington, 1963.

-----------, "Employment Service Spurs Placements of M.D.T.A. Trainees," *The Labor Market and Employment Security*. August 1963, pp. 1-5.

-----------, *Family Characteristics of the Long-Term Unemployed* T.E.U.C. Report Series Nos. 1-5, B.E.S. No. U-207. Washington, U. S. Department of Labor, 1962-63.

-----------, *The Insured Unemployed in November 1961.* Washington: Bureau of Employment Security, 1961.

U. S. Bureau of the Census. *Census of Population 1960: Detailed Characteristics Report*, *Connecticut*. P C (L), Washington: U. S. Government Printing Office, 1962.

U. S. House of Representatives, Select Subcommittee on Labor, Committee on Education and Labor. *Hearings*, *Manpower Development and Training Act*. 88th Congress, 1st Session, Washington: U. S. Government Printing Office, 1963.

U. S. Office of Manpower, Automation and Training. *Training for Jobs in Redevelopment Areas*, Washington: 1962.

------------, *Training Projects Approved Under the Manpower Development and Training Act During Fiscal 1963.* Report No. 28, Washington: Office of Manpower, Automation and Training, 1963.

U. S. Senate, Subcommittee of the Committee on Appropriations. *Labor Health*, *Education and Welfare Appropriations for 1964 Part 1*. 88th Congress, 1st Session, Washington: U. S. Government Printing Office, 1963.

U. S. Senate, Subcommittee on Employment and Manpower of the Committee on Labor and Public Welfare. *Manpower Retraining*. 88th Congress 1st Session. Washington: U. S. Government Printing Office, 1963.

------------, *Nation's Manpower Revolution*. Parts 1-9, 88th Congress, 1st Session, Washington: U. S. Government Printing Office, 1963.

------------, *Training of the Unemployed*. 87th Congress, 1st Session, Washington: U. S. Government Printing Office, 1961.

Wirtz, W. Willard. *Report of the Secretary of Labor on Research and Training Activities Under the Manpower Development and Training Act*. Transmitted to Congress February 1963, Washington: U. S. Government Printing Office, 1963.